Mesa Verde
National Park • Colorado

National Park Service
U.S. Department of the Interior

Far View Lodging Rehabilitation/Replacement of Facilities Environmental Assessment and Assessment of Effect

March 2004

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Environmental Assessment and Assessment of Effect

Far View Lodging Rehabilitation/ Replacement of Facilities Mesa Verde National Park · Colorado

The National Park Service (NPS) proposes to rehabilitate or replace the Far View Lodge, lodging units, and the Far View secondary wastewater treatment system at Mesa Verde National Park. The purpose of this action is to improve visitor services, provide an opportunity for year-round visitor accommodations, and enhance visitor understanding and appreciation. By reducing the increasing maintenance requirements of the aging lodging facilities and infrastructure and by increasing the capacity and efficiency of the wastewater treatment system, the park also would protect and conserve resources.

Four alternatives were evaluated for their respective potential impacts on the natural, cultural, and human environment.

Alternative A – No Action/Continue Current Management: Alternative A would continue current management of the Far View lodging complex operations and maintain existing project area conditions. No measures would be taken by the park to rehabilitate or improve conditions as they currently exist except for future management actions that would occur regardless of the alternative selected.

Alternative B – Rehabilitate the Lodge and Lodging Units: Far View Lodge and the lodging units would be rehabilitated to make them more compatible with the park's theme, history, and architecture, and to replace outdated materials, utilities, and fixtures. The building footprints of each of the lodging units would remain approximately the same; however, an Americans with Disabilities Act-compliant elevator would be installed and visitor amenities added in the Far View Lodge. Rehabilitation would include steps to make the lodging complex potentially available for year-round use. A new tertiary wastewater treatment system would be constructed in the existing system's footprint.

Alternative C – Preferred Alternative; Expand and Convert the Lodge and Construct New Lodging Units: Far View Lodge would be expanded and converted to serve as a restaurant and lounge, new lodging units would be constructed in a dispersed campus-like setting, provisions for year-round use would be incorporated, and visitor reception services would be relocated from the existing lodge to a newly built facility. New construction would minimize ground disturbance by using existing building locations where feasible, and those footprints not used would be reclaimed and revegetated. The building exteriors would improve building aesthetics and architectural compatibility. A new tertiary wastewater treatment system would be constructed in the existing system's footprint.

Alternative D – Construct a New Lodge Consolidated with New Lodging Units: A new lodge and lodging units with the potential for year-round use would be constructed, the existing lodge would be adapted primarily for NPS administrative use, and a demolition plan would be established for the existing lodging units. The newly constructed lodge, lounge, and lodging units would be consolidated into two buildings, and designed to be

more compatible with the park's theme, history, and architecture. A new tertiary wastewater treatment system would be constructed in the existing system's footprint.

This environmental assessment evaluated the effects of these alternatives on energy efficiency and conservation potential; natural lightscape (night sky); soils; natural soundscape; vegetation; water resources; wildlife and habitats; cultural landscapes; accessibility for individuals with impaired mobility; economics and socioeconomics; park operations; public health and safety; sustainability and long-term management; and visitor understanding and appreciation. None of the alternatives would have major effects on any of these impact topics or would impair resources and values that are considered necessary and appropriate to fulfill the purpose of Mesa Verde National Park. Among other benefits, the rehabilitation or replacement actions would make the facilities more energy efficient, help ensure the protection of the park's natural and cultural resources, expand visitor opportunities with the potential introduction of winter use, and support timely response to emergencies.

The purpose of this environmental assessment is to determine and document the effects of the rehabilitation or replacement of the Far View Lodge and lodging units on the natural, cultural, and social resources of Mesa Verde National Park and its vicinity. This environmental assessment also serves as an assessment of effect and will be sent to the Colorado state historic preservation officer for compliance with the National Historic Preservation Act.

Public Comment

If you wish to comment on the environmental assessment, you may mail comments to the name and address below. This environmental assessment will be on public review for 30 days. Please note that names and addresses of people who comment become part of the public record. **If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment.** We will make all submissions from organizations, from businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety.

Please address written comments to:

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Mesa Verde National Park
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PURPOSE AND NEED FOR ACTION

BACKGROUND

Since its establishment in 1906, Mesa Verde National Park's mission has been to preserve the cultural, natural, and scientific resources of the area. Its purpose also includes providing the public with opportunities to experience the park and to appreciate the way of life of the Ancestral Pueblo people who occupied the mesa from about 400 A.D. to about 1300 A.D.

The Far View facilities are one of several locations providing visitor services at Mesa Verde National Park. However, the lodging complex is the only facility in the park that provides overnight lodging for visitors.

As shown in Figure 1, Mesa Verde National Park and Vicinity, the Far View facilities are located about 15 miles south of the park's entrance. The facilities at Far View include:

- The Far View Visitor Center;
- Far View Terrace restaurant and parking;
- The Far View lodging complex (consisting of the Far View Lodge, the lodging units and the associated infrastructure);
- The Far View secondary wastewater treatment facility; and
- Housing for National Park Service and concessioner staff.

The Far View lodging units were constructed on Navajo Hill beginning in the late 1960s. Far View Lodge was completed in 1973 (NPS 1970).

The Far View lodging complex consists of the lodge, the lodging units, and the associated infrastructure. The complex provides spectacular scenic views of the surrounding expanse of mesas which characterize the larger regional prehistoric context of the landscape. Far View offers the visitor an opportunity to experience the wildlife, natural quiet, unique setting, and views of the surrounding landscape.

During the park's primary visitor use season (April through October), the Far View Lodge provides visitor services, including a reception area, gift shop, dining area, lounge, meeting room, and 150 overnight lodging units. Park information is provided at the Far View Visitor Center during the primary visitor use season, when the visitor center is open.

Throughout the year, visitors can obtain information and purchase meals at the museum and park headquarters area on Chapin Mesa, about 6 miles south of Far View. However, the Chapin Mesa area does not provide any lodging.

Visitor services also are available at Morefield Village and Campground, located about 4 miles south of the park entrance. Like the Far View lodging complex, the facilities at Morefield are only open from April through October. Morefield is the only location in the park where overnight camping is available.

The contract for concessioner services will be renewed prior to the end of 2004. Thus, it is an opportune time to identify the upgrades to the Far View lodging complex as the cost of the changes would be included in the new contract. Concessioner services that would be provided at the Far View lodging complex would only represent a portion of the services represented under the new contract.

PURPOSE

The National Park Service (NPS) proposes to rehabilitate or replace the Far View Lodge, lodging units, and the Far View secondary wastewater treatment system at Mesa Verde National Park. The purpose of this action is to improve visitor services, provide an opportunity for year-round visitor accommodations, and enhance visitor understanding and appreciation. By reducing the increasing maintenance requirements of the aging lodging facilities and infrastructure and by increasing the capacity and efficiency of the wastewater treatment system, the park also would protect and conserve resources.

The proposed action would rehabilitate and/or replace the Far View Lodge and deteriorating modular-design lodging buildings, and upgrade the existing secondary wastewater treatment system. All of the actions associated with the rehabilitation or replacement of lodging facilities and upgrade to the wastewater treatment system would meet the NPS *Management Policies 2001* (NPS 2000b) requirements. The selected alternative would be consistent with the overall management direction provided by the park's general management plan (NPS 1979).

Objectives of the action are to rehabilitate or replace the Far View Lodge and lodging units (collectively referred to as the Far View lodging complex) and associated wastewater treatment system with facilities that would:

- Enhance the unique visitor experience at Far View by providing an opportunity for year-round lodging.
- Provide a range of high-quality, overnight visitor accommodation and ancillary services.
- Address the immediate visitor health and safety problems that exist because of inadequate access and the lack of safety communication systems.
- Meet the requirements of the Americans with Disabilities Act for wheelchair accessibility and all current building code requirements.
- Enhance natural resource protection by improving the quality of water discharged from the secondary wastewater treatment system and employing water conservation measures.

- Establish a centralized visitor destination area that is visually and architecturally compatible with the surrounding landscape and existing park architectural styles, incorporates sustainable design concepts, and is consistent with the park's general management plan (NPS 1979).

If the preceding conditions are achieved, the action would be considered a success.

The purpose of this environmental assessment is to determine and document the effects of the rehabilitation or replacement of the Far View lodging complex on the natural, cultural, and social resources of Mesa Verde National Park and its vicinity. This environmental assessment also serves as an assessment of effect and will be sent to the Colorado state historic preservation officer for compliance with the National Historic Preservation Act.

NEED

The proposed action is needed to reduce the increasing cost of maintaining the lodging units, improve the efficiency of park operations, and protect the park's natural resources. Concerns that would be addressed by the proposed action include the following.

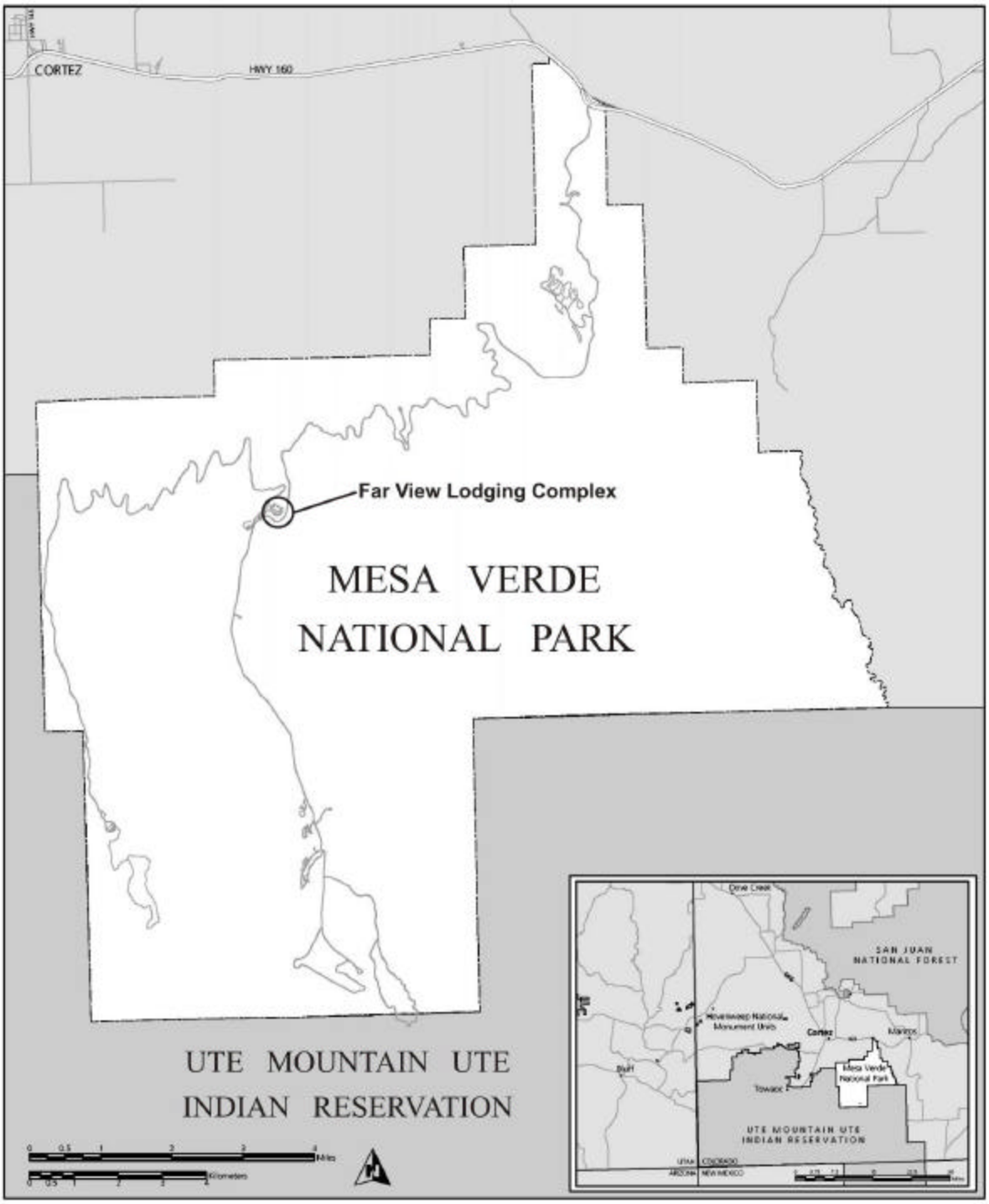
- The lodging units and lodge at Far View are deteriorating. Many of the 150 lodging units need constant repairs because their components or systems have exceeded their 30-year life expectancy. The need for maintenance or repair will continue to increase as the lodging units and infrastructure continue to age. Renovation or replacement is needed to reduce maintenance costs and maintain a high level of visitor service. The number of units would remain the same (150).

- The current lodging facilities are not energy efficient. The structures are not insulated and the heating and cooling systems are not operationally reliable. An emphasis on energy efficient and sustainable design for the lodging facilities would provide energy savings.

- Water conservation is a high priority at Mesa Verde National Park. Measures such as low-flow toilets and showerheads are needed in the lodging units to conserve the park's limited water resources.

- As shown in the photographs on the pages following the park map, the existing facilities do not reflect the character of Mesa Verde National Park. Any replacement facilities would be designed to blend with the cultural setting and reflect the architectural heritage of the park.

Figure 1. Mesa Verde National Park and Vicinity



- The National Park Service has received complaints about inadequate access to Far View Lodge and its dining facilities for people with impaired mobility. The visitor reception area at the lodge is cramped and some areas are not accessible to employees or visitors with impaired mobility. Any renovation or replacement project would be designed to improve access for people with mobility impairments.

- The lodging units are not equipped with telephones, wired smoke alarms, or fire suppression systems. Upgrades are needed to improve safety and visitor services. The existing elevated pier construction poses an increased risk from wildland fire because fire can easily attack the underside of the structures.

- The lodge's visitor reception area is small and cannot be used for other purposes. Visitor experience would be improved if this area was expanded to provide other visitor support needs.

- The current buildings were not designed for winter use, and the lodging complex only is open from April through October. The closest lodging for winter visitors is in Cortez or Mancos, both of which are about 30 miles from the park resources on Chapin Mesa. The potential ability to provide year-round lodging at Far View would improve the ability of visitors to experience Mesa Verde National Park during the winter season if the potential is realized.

- The demand on the Far View secondary wastewater treatment facility frequently exceeds capacity during peak visitor use periods. The excess effluent cannot meet Environmental Protection Agency discharge requirements without chemical additives. Although the treated effluent meets water quality standards, excess treated effluent is often discharged during peak use periods. This creates natural resource impacts in Little Soda Canyon. Upgrades to the system are necessary to protect natural resources.

- Incorporation of sustainable design principles could provide a forum to educate visitors about the value of "green" development.

Photograph 1. The Far View Lodge Entrance

Photograph 2. The South Side of the Far View Lodge

Photograph 3. Typical Far View Lodging Unit

Photograph 4. Mobility-Impaired Access Ramp at One of the Lodging Units

Photograph 5. The "Far View," Also Showing the East Side of the Lodge

ANALYSIS AREA

The analysis area included the roads, parking lots, o pen space, and buildings located within the developed area of the Far View lodging complex, and lands within 150 feet of the outer edge of gravel or pavement within the complex. Lands within 150 feet of the Far View lodging complex facilities experience periodic disturbance from visitor use. These same lands would be within the temporary construction easements that would be associated with the proposed action. This area is illustrated on Figure 2, The Far View Lodging Complex Project Area on the following p age.

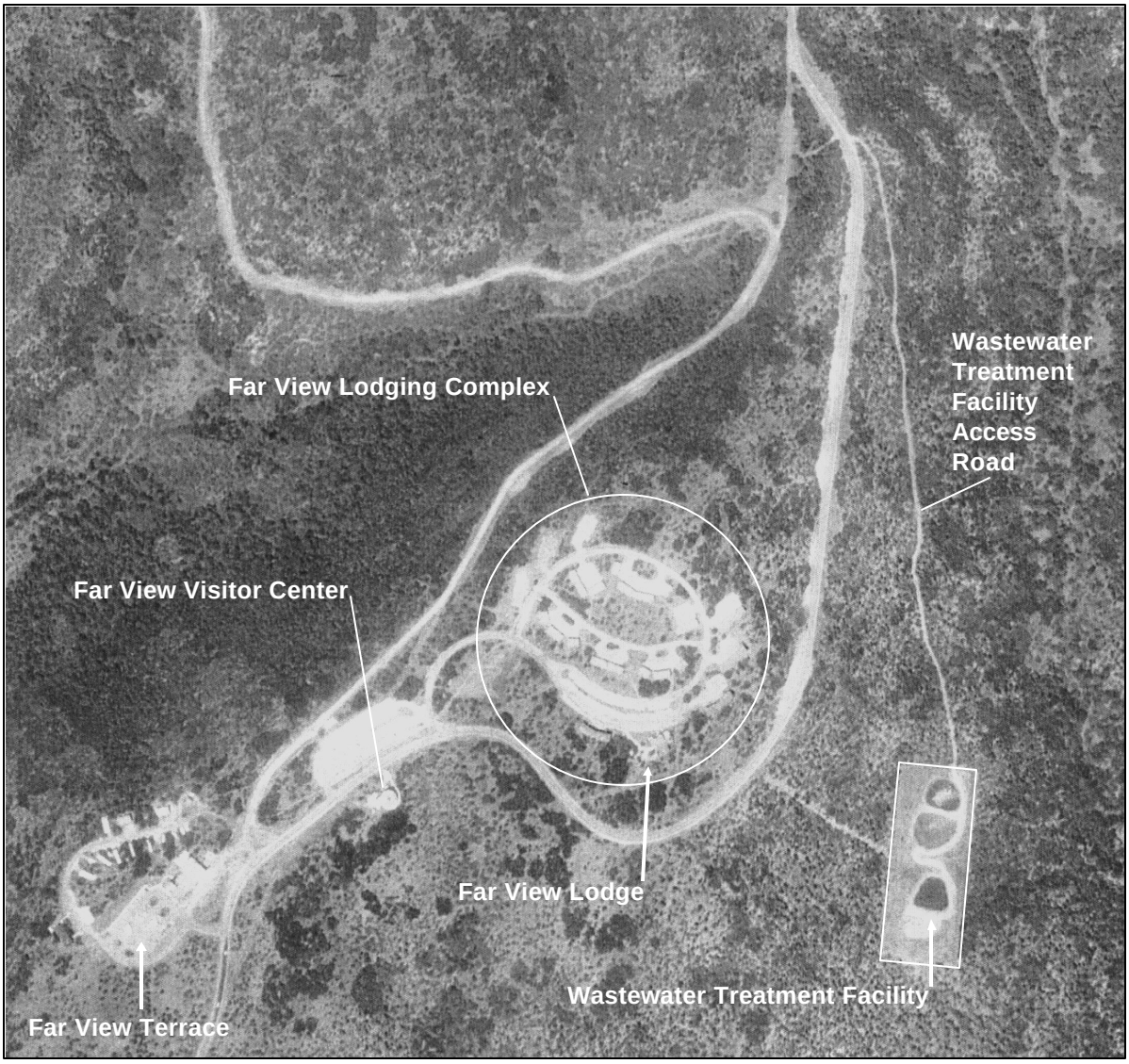
Far View lodging operations are supported by water, sewer, and electrical utilities. Water and electricity originate offsite and would not be affected by any of the alternatives. Wastewater from the Far View lodging complex is treated in lagoons at the Far View secondary wastewater treatment facility southeast of the complex and across the park entrance road. Because it is necessary to upgrade this facility, the project area includes the existing access road from the Far View lodging complex to the wastewater treatment facility. This area is included in Figure 2.

RELATIONSHIP TO OTHER PARK PLANS AND PROJECTS

Several plans and projects that the National Park Service either has in place or in process may affect decisions regarding the Far View lodging facilities. The following existing or future plans and policy documents could be applicable to this rehabilitation or replacement project.

Mesa Verde General Management Plan. A park's general management plan describes the general approach the National Park Service intends to follow in managing that park unit over the next 15 to 20 years. Mesa Verde National Park's general management plan was approved in 1979 (NPS 1979). Since then, park visitation has increased and the buildings have aged, which has led to a need to upgrade visitor lodging facilities**.** The park's general management plan calls for the continuation of overnight lodging and for concessioner-operated cafeteria, restaurant, craft shop, and evening interpretive programs at the Far View facilities. It also calls for maximizing the number of people who can experience the park by extending the visitor day and operating season.

FIGURE 2. THE FAR VIEW LODGING COMPLEX PROJECT AREA



Mesa Verde Visitor Distribution and Transportation Plan/EIS. In 1999, the National Park Service initiated a process of transportation planning and environmental impact statement to consider transit options. Regardless of the transportation option selected, the Far View lodging complex would remain a visitor destination.

Construction of Mesa Verde Cultural Center. The future Mesa Verde Cultural Center would become another visitor destination and would be located near the park entrance, 15 miles from Far View. Ticket sales, interpretive programs, book sales (operated by the Mesa Verde Museum Association) and other visitor services would augment those currently provided at Far View Lodge.

Comprehensive Interpretive Plan. This plan will define and establish interpretive themes for the park, including the Far View lodging complex. The locations and type of any interpretive services or interpretation programs offered at Far View would be established by partnering with the operators of the Far View lodging complex.

Mesa Verde Housing Replacement Project. The housing project, which would upgrade park staff and concessioner employee housing, as well as replace two staff housing buildings damaged by the Long Mesa fire in July 2002, may change the character and land use near the Far View site. The visual compatibility of the replacement housing with the lodging facilities is of concern.

The Morefield Campground Rehabilitation and Site Plan. Changes to the campground site plan would potentially change overnight camping accommodations in the park, which could affect use of the Far View lodging complex.

Park Construction Projects. There are several other current or upcoming park construction projects, including replacement of the park's water supply pipeline, upgrades of fire hydrants, and roadway improvement projects. All of these projects have the potential to produce air emissions, add sediment to waterways, and cause traffic congestion. Effects could be additive if other park construction projects occurred concurrently with lodging facility rehabilitation or replacement.

Fire Management Plan. Mesa Verde National Park has experienced five major wildfires in the past 7 years. As part of the response to these fires, the National Park Service is preparing a new fire management plan for the park. The plan will support efforts to maintain a healthy ecosystem while protecting the park's cultural resources and infrastructure. The plan will consider multiple management techniques for fuels reduction, fire suppression, and resource protection. Some of these management actions could affect some Far View visitors' sense of privacy or could have an effect on the scenic views in the Far View area.

PARK DESCRIPTION

Mesa Verde National Park, encompassing about 52,000 acres, is located in the high plateau country of southwestern Colorado. The primary park entrance is midway between Cortez and Mancos, south off U.S. Highway 160. The Far View lodging complex is 15 miles southwest of the park entrance and just northeast of the Far View Visitor Center. Park headquarters on Chapin Mesa are about 6 miles south of the Far View complex.

Mesa Verde, Spanish for "green table," offers an unparalleled opportunity to see and experience a unique cultural and physical landscape. The culture represented at Mesa Verde reflects more than 900 years of history. From approximately 550 A.D. through 1300 A.D., people lived and flourished in communities throughout the area, eventually building elaborate stone villages in the sheltered alcoves of the canyon walls. Today most people call these sheltered villages "cliff dwellings." The cliff dwellings represent the last 100 to 125 years of occupation at Mesa Verde. In the late 1200s, within the span of one or two generations, the Ancestral Puebloan people inhabiting the Mesa Verde area left their homes and moved away.

The archeological sites found in Mesa Verde are some of the most notable and best preserved in the United States. The park was designated as a World Cultural Heritage Site in 1987.

Mesa Verde National Park offers visitors a spectacular look into the lives of the Ancestral Pueblo people. Scientists study the ancient dwellings of Mesa Verde, in part, by making comparisons between the Ancestral Pueblo people and their contemporary indigenous descendants who still live in the Southwest today. Twenty-four Native American tribes in the Southwest have an ancestral affiliation or association with Mesa Verde. A list of these tribes is provided in the "Consultation and Coordination" section.

PARK PURPOSE

The purpose of Mesa Verde National Park is rooted in the park's legislated mandate, or its purpose for being, and its significance, or why it is special and deserving of protection. The park's original 1906 legislation established the park to preserve and protect from injury and spoliation, the sites, artifacts, and other works of Ancestral Puebloan peoples.

Ten years later, the National Park Service was established. The Organic Act, creating the National Park Service, also expanded the purpose of this park to protect both natural and cultural resources and values for the enjoyment, education, and inspiration of this and future generations.

Other acts that helped define the mission of Mesa Verde National Park include the following.

- In an act dated April 25, 1928, Congress further highlighted the need to protect the park's natural resources.
- An act in 1931 established the need to protect the scenery along the road to Point Lookout.
- On October 20, 1976, Congress designated wilderness in Mesa Verde National Park. This act expanded the park's purpose to manage and protect 8,500 acres of designated wilderness.

The resulting purpose of Mesa Verde National Park (NPS 1979) is to:

- Preserve and protect from injury and spoliation, the sites, artifacts, and other works of Ancestral Puebloan peoples.
- Preserve and protect from injury and spoliation, the woodlands, wildlife, and other natural features.
- Manage and protect the pristine character of designated wilderness on 8,500 acres.
- Provide for research to increase knowledge and aid in the advancement of archeological science.

- Recognize and respect the values and traditions of the affiliated Native American tribes; work to keep the relations with these tribes mutually beneficial.

- Protect the scenery along the road to Point Lookout.

The following statements of significance describe the unique resources and values of Mesa Verde that must be protected.

- Mesa Verde is an example of human interaction with the environment over thousands of years. Mesa Verde represents a significant aspect in the history and heritage of 24 specific tribes (listed in the "Consultation and Coordination" section), as well as visitors and employees who also have developed and maintained multi-generational ties to the park.

- Mesa Verde represents a significant and living link between Puebloan peoples' past and present way of life that provides the world community an opportunity to understand and respect the diversity of human history. The visitor to Mesa Verde National Park is enriched by physical access to the cliff dwellings and pueblo structures and by educational and interpretive opportunities to experience the Ancestral Pueblo people as a living culture.

- Mesa Verde is a significant natural resource preserve within a larger ecosystem — the Colorado Plateau, Four Corners Area. The high integrity of the park's dynamic biotic communities, geologic features, ecological processes (including wildland fire), water sources, natural soundscape, clean air, and dark night skies, form the core of the local Mesa Verde ecosystem.

- Mesa Verde National Park contains nationally and locally significant historic resources depicting early NPS structures, landscapes, and design, which reflect the Civilian Conservation Corps, homesteaders, the National Park Service, and American Indian experiences.

- Pioneering archeological research of the concentrated and well-preserved Ancestral Pueblo and historic sites continues to advance the field of archeology and the nation's understanding of these people.

- Grassroots concern about site destruction and artifact removal from Mesa Verde served as a catalyst for the 1906 passage of the Antiquities Act and the establishment of Mesa Verde National Park. Mesa Verde National Park's significance and worldwide value was recognized by its selection in 1978 as one of the seven original World Cultural Heritage Sites.

SCOPING

Issues associated with rehabilitation and/or replacement of Far View lodging facilities were identified by park staff with input from other federal, state, and local agencies, and the general public during scoping. The scoping process included the following:

- Internal scoping meetings were held with NPS staff at Mesa Verde National Park in February 2003.

- NPS staff met with representatives of the 24 Native American tribes associated with the park in March and September, 2003 to receive their input regarding this project. To date, no comments have been received.

- A public scoping notice and announcement were published in the *Cortez Journal* announcing the April 24, 2003 public meeting.

- A public scoping meeting was held at the offices of Empire Electric in Cortez, Colorado, at 10:00 A.M. on April 24, 2003.

Additional information on scoping is provided in the "Consultation and Coordination" section.

ISSUES

All issues that were identified using the above methods were summarized under three general categories: natural resource issues, cultural resource issues, and human environment and visitor use issues.

Natural Resource Issues. This category includes issues that would relate to natural lightscape, soils, natural soundscape, vegetation, water resources, and wildlife habitats. Summaries of the issues raised during scoping are provided below.

- *Natural lightscape (Night Sky).* There are concerns that providing opportunities for year-round lodging would decrease the visibility of the night sky during the winter season. Views of Far View from surrounding areas within the park could be affected by changes in lighting at the complex.

- *Soils.* Soils disturbed by excavation and construction could be vulnerable to wind and water erosion. Concerns were expressed that the soil disturbance could remove and bury topsoil and introduce soil loss through erosion and compaction.

- *Natural soundscape.* Changes in sound in the vicinity of the Far View lodging facilities during the winter season may cause noise impacts to the natural soundscape. Construction activity may temporarily affect visitor experiences.

- *Vegetation.* Land disturbance associated with some construction activities could remove or modify native vegetation and leave unvegetated disturbed areas. Disturbed areas are vulnerable to invasive, non-native plant species that potentially would hinder reestablishment of native species.

- *Water resources.* Changes in storm water runoff and deposition of hydrocarbons on access roads, parking lots, and other hard surfaces may increase pollution of surface waters and affect water quality. Potential year-round use of the lodging facilities may increase wastewater discharge.

- *Wildlife and habitats.* Concern was expressed that proposed alternatives could cause the loss of some individuals or could change habitat distribution or species diversity. Effects could include disrupted behavior, or temporary or permanent displacement of wildlife.

Cultural Resource Issues. Cultural resources were divided into historic buildings and structures, and museum collections; archeological resources (prehistoric and historic); cultural landscapes; and ethnographic and traditional cultural properties, which includes Native American concerns and ethnographic landscapes. Summaries of the issues identified during scoping are provided below.

- *Historic buildings and structures, and museum collections*. There are no historic structures, buildings, or museum collections within the Far View lodging complex project area. The complex is adjacent to the Far View Visitor Center, which is eligible for listing in the National Register of Historic Places. However, the proposed action would not affect the eligibility of the visitor center. Therefore, this topic will not be discussed further in this document. See the section entitled "Impact Topics not Warranting Detailed Evaluation" for a more detailed explanation of why this was dismissed.

- *Archeological resources.* The entire park is part of an archeological district determined eligible for the National Register of Historic Places, so unless otherwise identified, all sites within these areas also are considered listed and must be managed accordingly. During the rehabilitation or replacement of the lodge and lodging units, there would be the potential for known archeological resources to be affected or for new sites to be uncovered.

- *Cultural landscapes.* The Far View lodging complex has not been determined to be a cultural landscape, thus this topic will not be discussed further in this document.

- *Ethnographic and traditional cultural properties*. No ethnographic and traditional cultural properties or landscapes have been formally identified within or adjacent to the project area. Therefore this topic has been dismissed from further analysis. See the section entitled "Impact Topics not Warranting Detailed Evaluation."

Human Environment and Visitor Use Issues. This category includes issues that involve Americans with Disabilities Act compliance; land use plans, policies, or controls; economics and socioeconomics; energy efficiency and conservation potential; park operations; visitor understanding and appreciation; public health and safety; and sustainability and long-term management. Summaries of the issues that were identified during scoping are provided below.

- *Americans with Disabilities Act compliance.* Issues associated with the Americans with Disabilities Act included the availability of wheelchair-accessible parking spaces and wheelchair-accessible walkways between facilities at the Far View lodging complex. Concerns were expressed about the limited accessibility within the lodging facilities for people with impaired mobility, and particularly their inability to access desirable viewing areas within the Far View Lodge dining room.

- *Land use plans, policies, or controls.* Concern was expressed regarding whether land use plans, policies, or controls would conflict with the proposed action.

- *Economics and socioeconomics.* Extending the lodging operation into the winter season could change local hotel service industry revenues and affect the local economy. Concerns were expressed about the effect of concession operations on local construction contracts, and that the project could change the county tax base. There is likely to be a rate increase associated with the proposed action.

- *Energy efficiency and conservation potential.* The project's architectural design could change the daily use and demand on energy. Providing opportunities for year-round operations could increase the amount of energy used annually at the Far View lodging complex.

- *Park Operations.* Several concerns expressed about park or concession operations at Far View included:

  - Increased requirements for visitor services and concession management operations may overload park ranger and interpretation staff, which may affect other visitor services.

  - Increased park operation workloads may be required for snow removal, structural fire protection, and law enforcement. The need for increased routine and emergency services may affect overall park operations and efficiency.

  - Extending the seasonal operation of the lodging facilities could increase the demands on the current wastewater treatment operation and exceed the currently permitted discharge or loading capacity.

- *Visitor Understanding and Appreciation*. The current Far View lodging facilities are not well integrated with the park's interpretation program and themes, and do not portray a clear sense of place (or "immersion") to the visitor. The range of overnight visitor experiences at Mesa Verde National Park is limited to the spring, summer, and fall seasons because lodging is not available in the winter. Concerns were expressed about visitor accommodation, comfort, accessibility, and security.

- *Public Health and Safety*. Concerns were expressed that the absence of telephones in the lodging units prevented visitors from contacting emergency services or the visitor service desk at Far View Lodge. The lodge and lodging units are not equipped with fire sprinklers (although the older buildings are not required to have sprinklers) or a smoke alarm system. Tight turning radii on current access roads may prevent emergency vehicles from quickly responding to public emergencies. Certain building designs, materials, and site layouts could limit the capability to protect public health and safety by making it hard to locate and respond to emergencies in a timely manner.

- *Sustainability and Long-Term Management*. Park staff is concerned about the less than optimum sustainability at the existing complex, the capability to recycle building

materials and remove solid waste from the site during and after the project, and the incorporation of sustainable design concepts and features in any new facilities.

DERIVATION OF IMPACT TOPICS

The issues and concerns identified above were considered in conjunction with applicable federal laws, regulations, and executive orders, and *Management Policies 2001* (NPS 2000b) to establish the possible impact topics that could be analyzed in this environmental assessment. Possible impact topics also were identified based on agency and public concerns, and resource information specific to Mesa Verde National Park. The list of possible impact topics is provided in Table 1. The table also includes relevant regulations or policies for each impact topic. All of the impact topics marked "retain" in Table 1 were addressed in the "Affected Environment and Environmental Consequences" section of this document.

IMPACT TOPICS NOT WARRANTING DETAILED EVALUATION

The guidelines for National Environmental Policy Act compliance presented in *Director's Order #12 and Handbook* (NPS 2001a) include 13 impact topics that must be considered in all environmental evaluations. Other impact topics were identified from sources described in the preceding paragraph. However, NPS guidance recognizes that not all of the candidate impact topics warrant a detailed evaluation. Based on site-specific conditions, several of the impact topics were dismissed from further consideration, including those whose impacts, based on preliminary analysis, were projected to be no greater than negligible for all of the alternatives. The rationales for dismissal of impact topics are provided in the text following the table.

TABLE 1. IMPACT TOPICS RETAINED OR DISMISSED FROM FURTHER CONSIDERATION

Impact Topic	Retain or Dismiss	Relevant Law, Regulation or Policy
Natural resource impact topics		
Air quality	Dismiss	Federal Clean Air Act, Clean Air Act Amendments of 1990, *Management Policies 2001*
Ecologically critical areas or other unique natural resources	Dismiss	Wild and Scenic Rivers Act, 36 *Code of Federal Regulations* (62 criteria for national natural landmarks), *Management Policies 2001*
Endangered or threatened species and critical habitats	Dismiss	Endangered Species Act; *Management Policies 2001*
Energy efficiency and conservation potential	Retain	*Management Policies 2001*, Executive Order 13123
Geology	Dismiss	*Management Policies 2001*
Natural lightscape (Night sky)	Retain	*Management Policies 2001*

TABLE 1: IMPACT TOPICS RETAINED OR DISMISSED FROM FURTHER CONSIDERATION (CONTINUED)

Impact Topic	Retain or Dismiss	Relevant Law, Regulation or Policy
Prime and unique farmland	Dismiss	Council on Environmental Quality (1980) memorandum on prime and unique farmlands
Soils	Retain	*Management Policies 2001*
Natural soundscape	Retain	*Management Policies 2001*
Vegetation	Retain	*Management Policies 2001*
Water resources	Retain	Clean Water Act, Executive Order 12088, *Management Policies 2001*
Wetlands and floodplains	Dismiss	Executive Order 11988, Executive Order 11990, Rivers and Harbors Appropriation Act, Clean Water Act, *Management Policies 2001*, Director's Order 77-1, Director's Order 77-2
Wildlife and habitats	Retain	*Management Policies 2001*
Wilderness	Dismiss	*Management Policies 2001*
Cultural resource impact topics		
Historic structures and museum collections (relevance of structures is discussed in the cultural landscape topic below)	Dismiss	Section 106 of National Historic Preservation Act; 36 *Code of Federal Regulations* 800; National Environmental Policy Act; Executive Order 13007; Director's Order 28; *Management Policies 2001*
Archeological resources	Retain	Sections 106 and 110 of the National Historic Preservation Act; 36 *Code of Federal Regulations* 800, ACHP regulations; American Antiquities Act of 1906; Director's Order 28; *Management Policies 2001*
Ethnographic and traditional cultural properties, including Native American concerns, and ethnographic landscapes	Dismiss	Sections 106 and 110 of the National Historic Preservation Act; Native American Graves Protection and Repatriation Act of 1990; Executive Order 13007; Director's Order 28; *Management Policies 2001*
Cultural landscapes (not including ethnographic landscapes)	Dismiss	Sections 106 and 110 National Historic Preservation Act; Director's Order 28; *Management Policies 2001*
Human environment and visitor use impact topics		
Accessibility for individuals with impaired mobility	Retain	Director's Order 42; Americans with Disabilities Act of 1990; *Management Policies 2001*
Conflicts with land use plans, policies, or controls	Dismiss	*Management Policies 2001*
Economics and socioeconomics	Retain	40 *Code of Federal Regulations* 1500 (Regulations for Implementing the National Environmental Policy

TABLE 1: IMPACT TOPICS RETAINED OR DISMISSED FROM FURTHER CONSIDERATION (CONTINUED)

Impact Topic	Retain or Dismiss	Relevant Law, Regulation or Policy
		Act)
Environmental justice	Dismiss	Executive Order 12898
Indian trust resources	Dismiss	Department of the Interior Secretarial Order No. 3206, Secretarial Order No. 3175
Natural or depletable resource requirements and conservation potential	Dismiss	*Management Policies 2001*
Park operations	Retain	*Management Policies 2001*
Public health and safety	Retain	*Management Policies 2001*
Sustainability and long-term management	Retain	National Environmental Policy Act, 40 *Code of Federal Regulations* 1500 (Regulations for Implementing the National Environmental Policy Act), *Management Policies 2001*
Visitor understanding and appreciation (including design style)	Retain	Organic Act; *Management Policies 2001*

RATIONALES FOR DISMISSING IMPACT TOPICS

Air quality: There would only be temporary, inconsequential impacts on air quality during rehabilitation or replacement of the facilities at the Far View lodging complex because best management practices would be used to minimize fugitive dust and emissions from construction equipment. In the long term, air quality would not be degraded because there would not be any appreciable change in emissions sources, nor would there be a change in the Class I airshed classification.

Cultural landscapes: No cultural landscapes have been determined to exist within the Far View lodging complex and the proposed action would have no effects on any cultural landscapes within the park.

Ecologically critical areas: Mesa Verde National Park does not contain any designated ecologically critical areas, wild and scenic rivers, or other unique natural resources, as referenced in 40 *Code of Federal Regulations* 1508.27.

Endangered or threatened species and critical habitats. There are no endangered or threatened species known to occur in the project area, thus there would be no potential to directly affect any listed species. Based on the park's existing and planned water conservation measures and the more efficient use of water associated with the action alternatives, there would be no increase in water consumption, and no effect on listed species downstream in the San Juan river basin.

Ethnographic and traditional cultural properties, including Native American concerns, and ethnographic landscapes: To date, no ethnographic concerns or

traditional cultural properties within the proposed project area have been identified. However, a survey to identify these concerns or the properties has not been conducted or requested by any of the 24 Native American tribes affiliated with the park. To date no ethnographic landscapes have been designated, therefore this topic was dismissed.

Geology. Far View lodging facilities are considered part of the park's developed area where previous disturbance of geological resources has occurred. Sound engineering designs and best management practices would be used to avoid problems associated with expansive soils or erosion during construction.

Historic structures and museum collections: The main entrance road is eligible for inclusion on the National Register of Historic Places but its alignment would not be affected by the proposed action. There are no historic structures or museum collections within the project area, therefore this topic was dismissed.

Prime and unique farmland: Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique agricultural land is land other than prime farmland that is used for production of specific high-value food and fiber crops. Both categories require that the land is available for farming uses. Lands within Mesa Verde National Park are not available for farming and, therefore, do not meet the definitions.

Wetlands and floodplains: None of the alternatives would occur within or affect a floodplain or wetland. There are no wetlands regulated under the provisions of Section 404 of the Clean Water Act, or areas designated as wetlands using the classification system of Cowardin *et al.* (1979), within the areas of potential effect.

Wilderness: The Far View lodging complex does not contain, nor is it adjacent to any designated or proposed wilderness areas.

Conflicts with land use plans, policies, or controls: This project would not conflict with the *Montezuma County Comprehensive Plan* policy statement on multiple uses (Montezuma County 1996). None of the alternatives would conflict with the planning goals for federal lands in Montezuma County.

Environmental justice: None of the alternatives would have disproportionate health or environmental effects on minorities or low-income populations as defined in the Environmental Protection Agency's (1996) *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis.*

Indian trust resources: Indian trust assets are owned by Native Americans but held in trust by the United States. According to NPS personnel, Mesa Verde National Park does not have any Indian trust assets within the park.

Natural or depletable resource requirements and conservation potential: The use and conservation of resources is considered under the impact topics of " Sustainability and Long-Term Management" and "Energy Efficiency and Conservation Potential."

ALTERNATIVES CONSIDERED

Three action alternatives and a No Action/Continue Current Management alternative were evaluated for the rehabilitation or replacement of the Far View lodging complex. The action alternatives identified were the result of internal scoping, agency input, and public scoping.

The action alternatives under consideration at the Far View lodging complex are conceptual in nature. They were developed in part by a contracted professional architect who worked closely with park staff, including historical and landscape architects. The final design would be developed after the completion of this environmental assessment and would be contingent on available funding. However, the final design would be reasonably similar to the selected alternative that was evaluated in this document.

Table 2 provides a summary of the elements associated with each of the alternatives evaluated in this environmental assessment. The major issues related to the rehabilitation or replacement of the Far View lodging complex that the action alternatives were designed to address were described in the "Purpose and Need for Action" section.

As part of the design analysis and project planning, a range of alternatives was considered. Those actions or alternatives that were not realistically feasible or did not adequately meet the project purpose and need were dismissed. A discussion of the actions or alternatives that were eliminated from further consideration is included at the end of this "Alternatives Considered" section.

TABLE 2. SUMMARY OF ALTERNATIVES FOR THE REHABILITATION OR REPLACEMENT OF FAR VIEW LODGE AND LODGING UNITS

Feature	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate the Lodge and Lodging Units	Alternative C Expand and Convert the Lodge and Construct New Lodging Units	Alternative D Construct a New Lodge Consolidated with New Lodging Units
Site Plan	The existing lodge and lodging units would not change.	The site layout of the lodge and lodging units would remain the same, with the lodging units themselves being rehabilitated in their existing footprints.	The Far View Lodge would be rehabilitated and expanded to serve primarily as a restaurant and lounge, with visitor service functions (e.g., lodge check in, front desk) moving to a newly built facility. Newly constructed lodging units, with 150 total units, would be distributed throughout the lodging complex, interspersed with vegetation, walkways, and interpretive areas in a campus-like setting.	A new lodge and lodging units would be constructed and the old units demolished. A central facility would house visitor services, dining and lounge functions, and would be connected with 150 lodging units. The layout would include the central facility connected with lodging units, with pathways that lead to interpretive areas, courtyards, and a second building containing lodging units. The existing lodge would be re-used for other NPS functions.
Design/Layout	The design and layout of the lodging complex would not change. The current design is outdated and not consistent with the park's architectural theme.	The general layout of the site would remain the same, with the exception that the lodge and lodging units would be rehabilitated with a design more compatible with the park. However, basic infrastructure makes it difficult to make design consistent with the park's architectural theme. Buildings would also be designed to maintain or enhance views of the surrounding landscape.	The design and layout of the lodge and lodging units would enhance views of the surrounding landscape, distribute lodging units throughout the lodging complex with pathways and interpretive areas in a campus-like setting, and situate visitor service functions in a facility near the entrance of the lodging complex. The design and layout would be made more consistent with the park's architectural theme.	The layout of the lodging complex would include a consolidated lodge with lodging units and a separate facility with additional lodging units. Open space would be provided, as the new facilities would not incorporate the entire lodging complex. The size and scale of the building make it difficult to make the design consistent with the park's architectural theme. Existing lodging units would be demolished.

TABLE 2. SUMMARY OF ALTERNATIVES FOR THE REHABILITATION OR REPLACEMENT OF FAR VIEW LODGE AND LODGING UNITS

Feature	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate the Lodge and Lodging Units	Alternative C Expand and Convert the Lodge and Construct New Lodging Units	Alternative D Construct a New Lodge Consolidated with New Lodging Units
Lodge	No remodeling would be done to improve the visitor reception area, visitor flow, or to provide upgraded kitchen and dining room work spaces. The lodge would continue to be open for visitors only from April through October.	Select interior spaces of the lodge would be modified to improve visitor flow, enhance views from the lodge, and provide adequate work stations in the dining area. The lodge would be modified to offer the opportunity for year-round use.	Rehabilitation of the Far View Lodge would expand the dining facilities and increase visitor amenities. Indoor dining facilities would be enlarged by expanding the Far View Lodge lower dining area, increasing seating capacity to 48, and constructing a new outdoor deck. The lodge would be modified to offer the opportunity for year-round use.	The new lodge would be constructed at the front entrance to the Far View lodging facilities. The lodge would feature a new visitor reception area, coffee shop, gift shop, lounge, meeting rooms, and formal dining. The existing lodge would be adapted for another use. The lodge would be modified to offer the opportunity for year-round use.
Americans with Disabilities Act compliance	No modifications to the lodge with respect to Americans with Disabilities Act. Due to floor plan restrictions, visitors with impaired mobility would still be unable to access the lower main dining room without assistance.	An elevator would be added to the southeastern side of the building and restrooms would be remodeled to provide full Americans with Disabilities Act accessibility.	An elevator would be added and all levels of the lodge would be fully accessible to all visitors and staff. By incorporating the existing reception area and gift shop into the new facility, the capacity and organization of the fine dining area would be enhanced.	All new areas would be made fully accessible and Americans with Disabilities Act compliant. The existing lodge would be modified to install an elevator for Americans with Disabilities Act-accessibility.

TABLE 2. SUMMARY OF ALTERNATIVES FOR THE REHABILITATION OR REPLACEMENT OF FAR VIEW LODGE AND LODGING UNITS

Feature	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate the Lodge and Lodging Units	Alternative C Expand and Convert the Lodge and Construct New Lodging Units	Alternative D Construct a New Lodge Consolidated with New Lodging Units
Visitor Services	Visitor reception services would remain in the existing Far View Lodge.	Visitor reception services would remain in the existing Far View Lodge; however modifications would be made to provide more room for visitor service, expand dining services, and to provide an outdoor patio/deck and viewing area.	A new visitor reception area located near the entrance to the lodging complex would be constructed and would include a gift shop, breakfast room, and meeting rooms. The existing lodge would be rehabilitated to expand dining services and provide an outdoor patio/deck and viewing area. Visitor service functions would transfer to the new facility. Additional outdoor park interpretive areas in the form of courtyards and/or plazas would be constructed.	A new visitor reception/lounge facility would be constructed that would have a reception area, formal dining, meeting rooms, a coffee shop, and a gift shop. All services would be located in this new consolidated facility.
Architectural Design	The architectural design of the Far View Lodge would remain incompatible with the lodging units and with the park's theme, history, and architecture.	Repairs to the buildings exterior would improve the building's aesthetics and architectural compatibility.	Exterior repairs and renovations would improve the building's aesthetics as described for Alternative B.	Architectural designs would be compatible with the park's theme, history, and architecture.

TABLE 2. SUMMARY OF ALTERNATIVES FOR THE REHABILITATION OR REPLACEMENT OF FAR VIEW LODGE AND LODGING UNITS

Feature	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate the Lodge and Lodging Units	Alternative C Expand and Convert the Lodge and Construct New Lodging Units	Alternative D Construct a New Lodge Consolidated with New Lodging Units
Lodging Units	Ongoing deterioration of the 17 modular-design lodge buildings with 150 overnight lodging units would continually increase maintenance needs. The complex would continue to be open for visitors only from April to October. Maintenance would be required to bring buildings up to present use requirements.	Far View lodging units would include 17 buildings with 150 overnight lodging units. Provisions would be made to potentially operate the lodging units year-round. Maintenance would also be required, in addition to other desired modifications.	Existing lodging units would be demolished and replaced with new construction of 150 overnight lodging units within 12 to 25 buildings, which would include connecting rooms and suites connected by courtyards and paths. Provisions would be made to potentially operate the lodging units year-round.	The new lodging units would be functionally integrated with the new central facility. There would be 150 overnight lodging units in two buildings. Provisions would be made to potentially operate the lodging units year-round.
Architectural Design	The architectural design of the lodging units would remain incompatible with the lodge and with the park's theme, history, and architecture.	Architectural design would emphasize compatibility with the theme of Mesa Verde National Park, to the extent that is possible working within the constraints of existing buildings and layout.	Architectural design would emphasize compatibility with the historic design themes and site layout of Mesa Verde National Park as much as possible.	Architectural design would emphasize compatibility with the historic design themes and site layout of Mesa Verde National Park, which would be limited only by the large overall size of the total buildings.

TABLE 2. SUMMARY OF ALTERNATIVES FOR THE REHABILITATION OR REPLACEMENT OF FAR VIEW LODGE AND LODGING UNITS

Feature	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate the Lodge and Lodging Units	Alternative C Expand and Convert the Lodge and Construct New Lodging Units	Alternative D Construct a New Lodge Consolidated with New Lodging Units
Building Materials/Fixtures	The park's ability to conserve water and energy, or implement sustainable park operations would be limited due to outdated and aging materials, utilities, and fixtures.	Lodging units would be retrofitted with low-flow fixtures, acoustic and thermal insulation, and electrical, HVAC and plumbing fixtures to meet current code. The electrical wiring of all facilities would be upgraded. Wastewater would be routed through the existing sanitary sewers and discharged into the new Far View wastewater treatment facility, to be installed and operated by the National Park Service.	Lodging unit materials, fixtures and utilities would be similar to Alternative B except that new sanitary sewer laterals would be constructed by the National Park Service.	Lodging unit materials, fixtures and utilities would be similar to Alternative B except that new sanitary sewer laterals would be constructed by the National Park Service.
Visitor Health and Safety	No improvements or upgrades to enhance visitor health and safety would take place.	Each unit would have a telephone, a fire alarm, and sprinkler system. Fire management and emergency vehicle access improvements would provide adequate turning radii, and facility design would make use of features such as parking lots and access roadways to create safe wildfire defensible space.	Emergency communication systems and defensible space would be similar as described for Alternative B.	Emergency communication systems and defensible space would be similar as described for Alternative B.

TABLE 2. SUMMARY OF ALTERNATIVES FOR THE REHABILITATION OR REPLACEMENT OF FAR VIEW LODGE AND LODGING UNITS

Feature	Alternative A No Action/Continue Current Management	Alternative B Rehabilitate the Lodge and Lodging Units	Alternative C Expand and Convert the Lodge and Construct New Lodging Units	Alternative D Construct a New Lodge Consolidated with New Lodging Units
Wastewater Treatment Facility	The Far View secondary wastewater treatment facility would not be changed or upgraded.	A new tertiary wastewater treatment facility would replace the existing system. All construction would occur in the existing wastewater treatment facility footprint. The facility would be designed to accommodate year-round use and a 25 percent expansion in capacity. Operation and maintenance would be NPS responsibility.	Same as described for Alternative B.	Same as described for Alternative B.
Total Capital Cost (lodge and lodging units	$0	$5,092,000	$16,371,000	$16,371,000
Wastewater Treatment Plant Capital Cost	$0	$2,125,000 (this will decrease somewhat because no new lateral sewerlines would be needed)	$2,125,000	$2,125,000
Total Initial Cost	$0	$7,217,000	$18,496,000	$18,496,000

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ALTERNATIVE A- NO ACTION/CONTINUE CURRENT MANAGEMENT

Alternative A is defined as the continuation of current management of the Far View lodging complex operations and project area conditions. No measures would be taken by the park to rehabilitate or improve conditions as they currently exist except for future management actions that would occur regardless of the alternative selected.

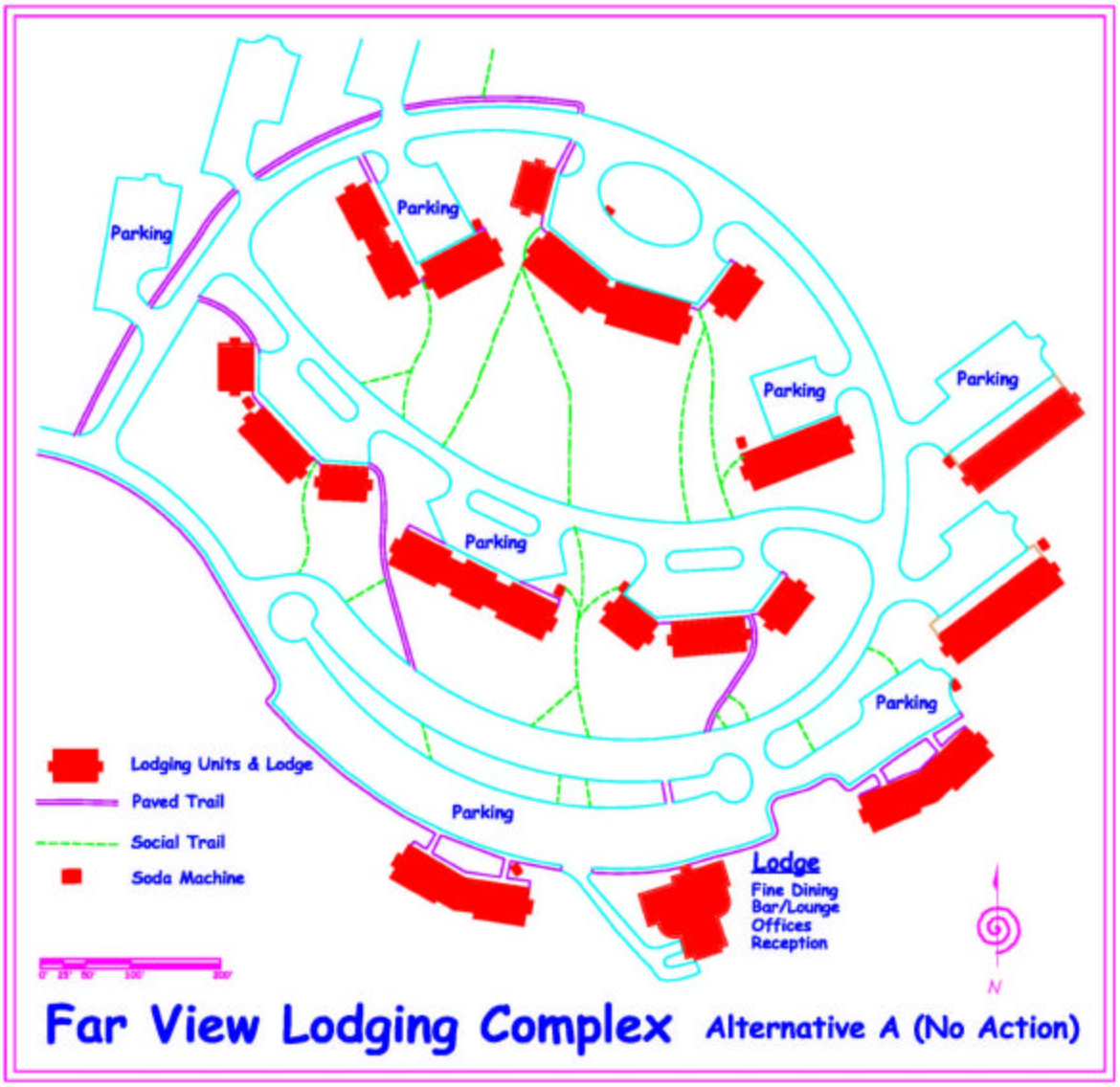
Site Plan. The Far View Lodge and lodging units are currently positioned to emphasize views of the surrounding landscape. Native low-growing vegetation allows spectacular views of the neighboring canyons and mesas; however, minimal screening is provided between lodging units. Under Alternative A, site characteristics and layout of the Far View Lodge and lodging units would not be modified. Grounds surrounding the lodging facilities would continue to be disturbed by social trailing and surface erosion. The current site grading, which leads to isolated erosion problem areas, would be maintained. No actions would be taken to control storm water runoff or reduce soil erosion. Refer to Figure 3, Plan View Alternative A on the following page, for a depiction of the existing site plan.

The traffic patterns currently in place would also remain the same under Alternative A. Presently, visitors unfamiliar with the area may be confused by the access to the Far View Terrace, the lodging complex, and the large parking lot serving the Far View Visitor Center. Smaller parking areas are located near the modular lodging units and distributed among the lodging complex. Emergency response vehicles have poor access and maneuverability to the Far View Lodge and lodging units because of the necessity to use the same limited traffic space as visitors. Emergency response vehicles need to follow the same traffic pattern and have inadequate space to turn around, maneuver, and park close to the facilities. Alternative A would continue these constraints, resulting in insufficient emergency access. Additionally, vehicle and pedestrian circulation patterns throughout the lodging complex would continue to be poorly designed and confusing to visitors navigating through the area.

Lodge. The irregularly shaped, three-story Far View Lodge is located northeast of the Far View Terrace parking lot and provides visitor reception services at the front desk, a gift shop, and fine dining/kitchen operations. There are main restrooms adjacent to the visitor reception area and there is an Americans with Disabilities Act-accessible restroom located in the same area. The visitor lounge, viewing areas, and decks are on the upper level, while restrooms, a meeting room, and laundry facilities are on the lower level.

Under Alternative A, poorly designed visitor reception and dining facility access would continue to impede visitor service and dining operations. During periods of high visitation, the visitor reception area would remain crowded and noisy, hindering the service that lodge staff can offer visitors. No remodeling would be done to improve the visitor reception area, visitor flow, or dining room or kitchen workspaces, and utilities would not be upgraded. Maintenance and repair requirements in this 30-year-old building would continue to increase and no long-term solutions to deteriorating systems would be provided.

FIGURE 3. PLAN VIEW ALTERNATIVE A



Mesa Verde National Park has received one formal complaint and several visitor comments about inaccessibility for the mobility impaired at the Far View Lodge and its dining facilities. As a result, the concessioner recently made changes (i.e., changed the floor elevation in the gift shop and made the multi-media room accessible on the lower level). Visitors with impaired mobility would still be unable to access the lower level main dining area without assistance due to floor plan restrictions (i.e., a step down to the lower level main dining area). However, parts of the building remain inaccessible. There is no restroom access from the lower level. As a result, a mobility-impaired visitor must exit the building on the lower level and go up to the main level to reach the restroom. The lounge on the upper story also is not accessible to visitors with impaired mobility. Accommodations are made by delivering drinks to mobility-impaired persons on the main level.

In addition, Alternative A would not include any modifications to the location of visitor reception services. These services would still be located in the Far View Lodge and access would be via the perimeter road northeast of the Far View Terrace parking lot. The present location of the lodge makes it difficult for first-time visitors to find, and this would continue under Alternative A.

Lodging Units. Currently, 17 buildings situated throughout the lodging complex provide 150 rooms for overnight accommodation. These lodging units are used only during the primary visitor use season from April through October, which would continue under Alternative A.

Ongoing deterioration of the modular-design lodging units would continually increase the requirements for maintenance and upkeep. These units, built in the 1960s through the 1980s, currently have components and/or systems that exceed their 30-year life expectancy (ARC 2002). Outdated building materials, utility systems and fixtures limit the park's ability to conserve water and energy and implement sustainable practices. Under Alternative A, the architectural design of the Far View Lodge and the lodging units would remain incompatible with each other and with the park's theme, history, and architecture.

Deteriorating asphalt sidewalks and roads would not be replaced and would undergo frequent removal and re-patching. Ground-disturbing activities associated with the sidewalks would continue to be routinely monitored to ensure protection of previously unknown archeological resources.

The overhanging roof design, pier foundations, and wood finish materials make the lodging units more vulnerable to fire damage. The lodge and lodging units do not have interior fire sprinklers, but fire hydrants are located in close proximity. Alternative A would not include modifications to existing lodging structures to add fire sprinklers. Also, emergency response would continue to be limited throughout the site because of inadequate turning radii for emergency vehicle access.

Wastewater Treatment Facility. Under Alternative A, no improvements would be made to the existing Far View secondary wastewater treatment facility. The current system, which was originally built in 1965 and modified in 2000, is a secondary treatment system designed with containment evaporation ponds. When use of the Far View facilities peaks in the summer, the amount of water entering the wastewater treatment facility exceeds the amount evaporated. As a result, there are often days when 30,000 to 40,000 gallons of clean, treated water are being discharged into Little Soda Canyon in the summer (NPS 2002a).

This effluent is discharged under a National Pollutant Discharge Elimination System permit issued by the Environmental Protection Agency, which mandates specific legally allowable discharge parameters. Wastewater effluent from the Far View treatment facility does not meet biological oxygen demand and total suspended solids discharge requirements unless measures are taken to minimize the growth of algae in the ponds. The main additives to meet discharge requirements are dyes that retard algae growth in the lagoons; however, these dyes are discharged along with the effluent into Little Soda Canyon. This results in a vivid blue water downstream and staining of vegetation.

Alternative A would not include construction of a new tertiary wastewater treatment system with increased capacity. Therefore, the park would continue having difficulty meeting the Environmental Protection Agency's discharge standards.

Summary of Responsibilities and Costs. The financial and operational responsibilities of the concessioner and the National Park Service will be delineated in the new concessions contract, expected to be completed during 2004. The costs associated with Alternative A would not differ from the budget estimates that are currently established. No additional funds would be allocated to rehabilitate the Far View lodging complex.

ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Alternative B would rehabilitate both the lodge and the lodging units to make them more compatible with each other and with the park's theme, history, and architecture, and to replace outdated materials, utilities, and fixtures. The building footprints of each of the lodging units would remain approximately the same (some lodging units would be expanded resulting in larger building footprints); however, an Americans with Disabilities Act-compliant elevator would be installed and visitor amenities added in the Far View Lodge that could expand the lodge's footprint by about 352 square feet. The facilities would be rehabilitated in a manner to provide the opportunity for year-round visitor use. A new tertiary wastewater treatment system would be constructed in the existing system's footprint that would be of adequate capacity to eliminate natural resource impacts, increase effluent quality, and treat potential increased sewage loads.

Site Plan. Surrounding landscape views from the facilities would be maintained or enhanced through the architectural design and layout of the lodge and lodging units. Minimal changes in site grading would be conducted to reduce erosion and control storm water runoff.

Visitor transit operation, parking, and emergency access would remain combined as described for Alternative A. Refer to Figure 4, Plan View Alternative B, for the site plan.

Visitor orientation would be improved when pedestrian circulation patterns are modified, more accessibility provided, and walkways replaced. Because of the cracked, patched, worn-out, and narrow condition of the asphalt walkways, the sidewalks would be replaced under Alternative B. Accessibility features for the mobility impaired, such as curb cuts and appropriate grading, would be provided. The new walkways would retain the same or similar footprint and location. Additionally, some informal pathways would also be paved to reduce the extent of social trailing and compaction that presently occurs in the area.

Lodge. Select interior spaces of the lodge would be modified to improve visitor flow, enhance views from the lodge, and provide adequate workstations in the dining area (see Figure 5, Lodge Main Floor Plan – Alternative B). An elevator would be added to the building and restrooms would be remodeled to provide full accessibility, in conformance with the Architectural Barriers Act of 1968 (P.L. 90-480), the Rehabilitation Act of 1973 (P.L. 93-112), and the 1984 Uniform Federal Accessibility Standards (UFAS). Repairs to the building's exterior would improve the aesthetics.

The Far View Lodge visitor reception/gift shop area would be rehabilitated, making the visitor reception area fully accessible to all visitors and staff as well as providing more room for visitor service. Modifications to the dining facilities would include adding a serving station to the dining room, and better access to a new outdoor deck would be built on the main level (see Figure 5, Lodge Main Floor Plan – Alternative B).

FIGURE 4. PLAN VIEW ALTERNATIVE B

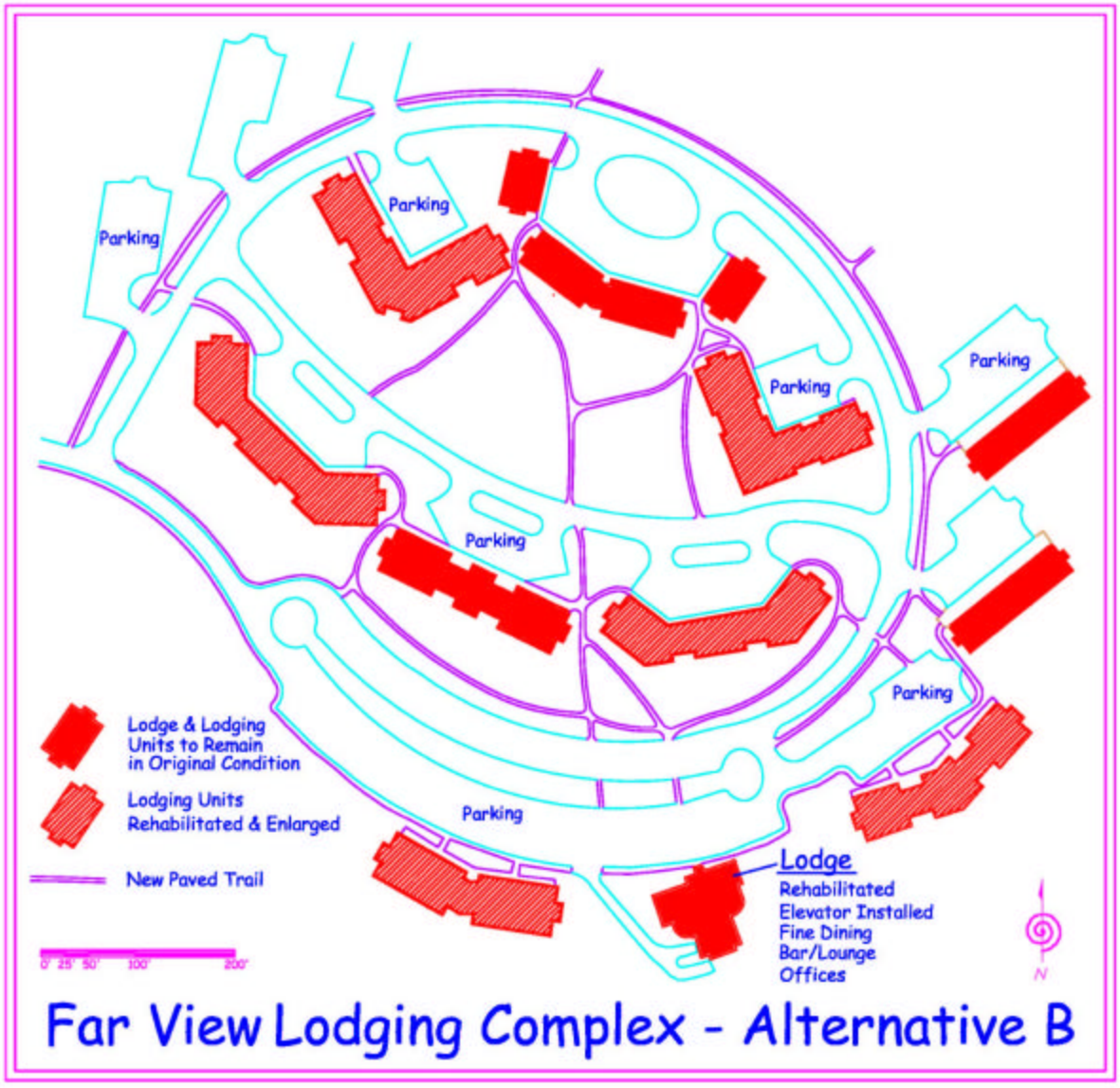
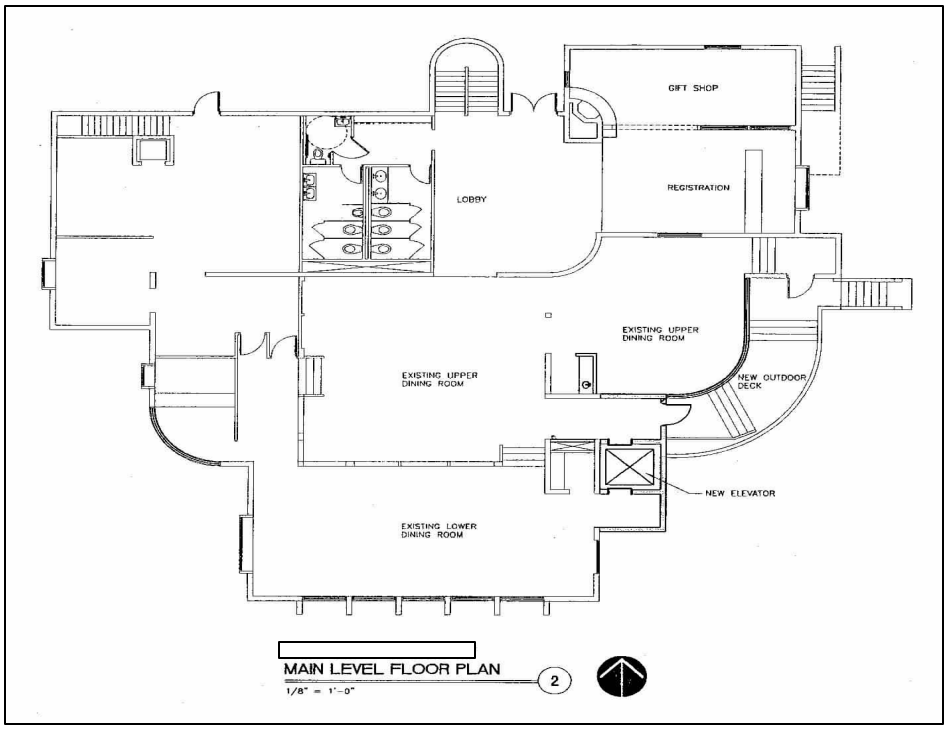


FIGURE 5. LODGE MAIN FLOOR PLAN – ALTERNATIVE B



On the upper level, there would be an addition to the east side of the lounge and the outdoor deck would be replaced. The accessible elevator and foyer would be constructed on the southeastern side of the building. These changes would reduce available dining capacity by four to six seats.

More viewing areas, an accessible restroom, and a new mechanical room would be provided adjacent to the existing meeting room, enlarging the room for visitor service on the lower level of the lodge.

The estimated additional area to be disturbed as a result of modifications to the lodge includes 352 square feet for the construction of an Americans with Disabilities Act-compliant elevator and the addition of three pylons to be used for replacement of the deck.

Lodging Units. Far View lodging units would include the 17 existing buildings with 150 overnight lodging units that could potentially be used year-round. Low maintenance, sustainable building materials would be used to rehabilitate these structures, and the architectural design would emphasize compatibility with the lodge and the theme of Mesa Verde National Park. These units would be retrofitted with low-flow fixtures, acoustic and thermal insulation, electrical, heating, ventilation, and air-conditioning (HVAC) and plumbing fixtures to meet current code. The electrical wiring of all facilities would be upgraded. These electrical upgrades would be located in previously disturbed ground and developed areas and would meet current codes.

The lodging units would include at least 5 percent of the rooms fully compliant with the Americans with Disabilities Act. Each unit would have a telephone and fire alarm communication system. Wiring for the telephones, alarms, and sprinkler systems would be embedded in the walls and concealed.

Fire management and emergency vehicle access improvements would provide an adequate turning radius and access to fire hydrants to ensure adequate response time. Facility design would make use of features such as parking lots and access roadways to create safe wildfire defensible space.

Rehabilitation activities would be phased so that at least a portion of the lodging units would always be available for visitor use.

Wastewater Treatment Facility. Under Alternative B, wastewater from the lodging facilities would be routed through the existing sanitary sewer system and discharged in a newly constructed tertiary wastewater treatment facility. Construction of the new treatment system would take place entirely in the existing system's footprint. The system would be designed for a 25 percent increase in capacity over the current system, which is considered adequate to handle current and future demand. Additionally, the current system's evaporation ponds freeze in the winter season; therefore a new system would be developed to accommodate potential year-round operations. Development of a new Far View wastewater treatment facility is common to Alternatives B, C, and D because each of these alternatives would provide opportunities for year-round use.

Summary of Responsibilities and Costs. The financial and operational responsibilities of the concessioner and the National Park Service will be defined in the new concessions contract, expected to be completed during 2004. The National Park Service would be responsible for construction and operation of the new wastewater treatment facility. The improvements associated with Alternative B would cost approximately $7,217,000, of which, about $2,125,000 would be allocated to upgrading the wastewater treatment facility. Note the total cost of the wastewater treatment system upgrades may be somewhat less because this alternative would not require new sewer laterals to serve new buildings.

ALTERNATIVE C - EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS (PREFERRED ALTERNATIVE)

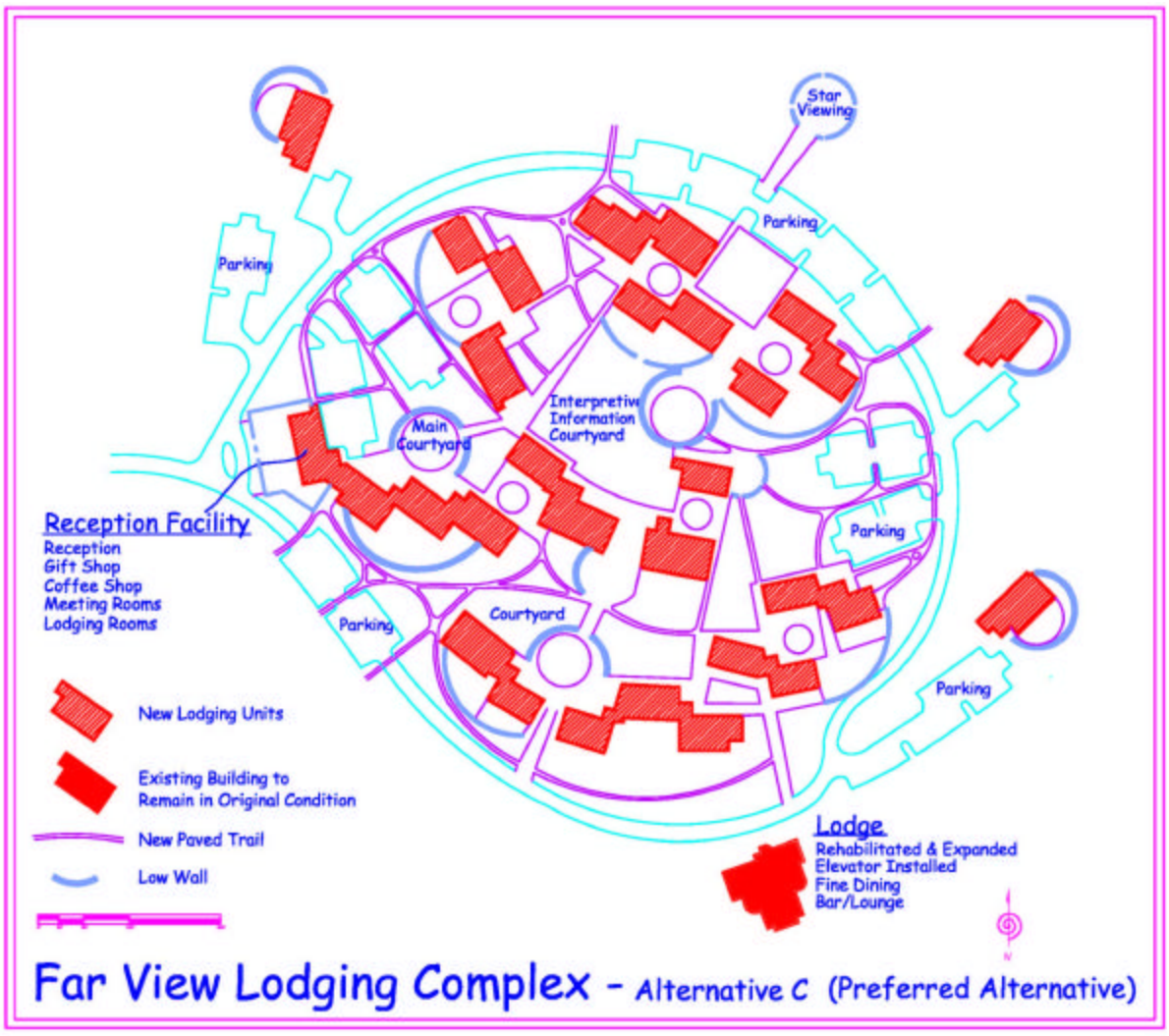
Under Alternative C, the preferred alternative, Far View Lodge would be rehabilitated and expanded, new lodging units with the opportunity to be operated year-round would be constructed, and visitor reception services would be relocated to a newly built facility. New construction would minimize ground disturbance by using existing building locations where feasible, and those footprints not used would be reclaimed and revegetated. The building exteriors would improve building aesthetics and architectural compatibility.

The new reception area for lodging would be constructed in a building located at the front entrance to the Far View lodging complex, where visitors would more easily locate the facility. The new reception area would feature a gift shop, breakfast room and meeting rooms, and a parking area would be located immediately adjacent to these services. Pedestrian pathways would guide and direct visitors to their lodging unit, as well as to public courtyards, interpretive areas, a star viewing area, and the Far View Lodge.

Site Plan. The architectural design and layout of the lodge and the lodging units would enhance views of the surrounding landscape, yet would still provide screening between units. Courtyards, scenic overlooks, and a star viewing area would be situated in the complex to allow visitors to immerse themselves in some of Mesa Verde's resources (see Figure 6). The 150 lodging units would consist of about 12 to 25 consolidated units, with the remaining units distributed throughout the lodging complex, interspersed with vegetation, pedestrian pathways, and interpretive areas in a campus-like setting. Where possible, site grading and native vegetation would be utilized to control storm water runoff and conserve water.

Pedestrian circulation would be redesigned and more visitor accessibility provided, including improved Americans with Disabilities Act access. Vehicle transit and parking lot modifications would improve visitor safety, increase accessibility, and direct visitors to lodging facilities. Pedestrian pathways would guide and direct visitors between parking and different areas within the lodging complex to reduce social trailing. The visitor reception services would be centrally located at the entrance to the lodging complex for easier detection and more efficient operations.

FIGURE 6. PLAN VIEW ALTERNATIVE C



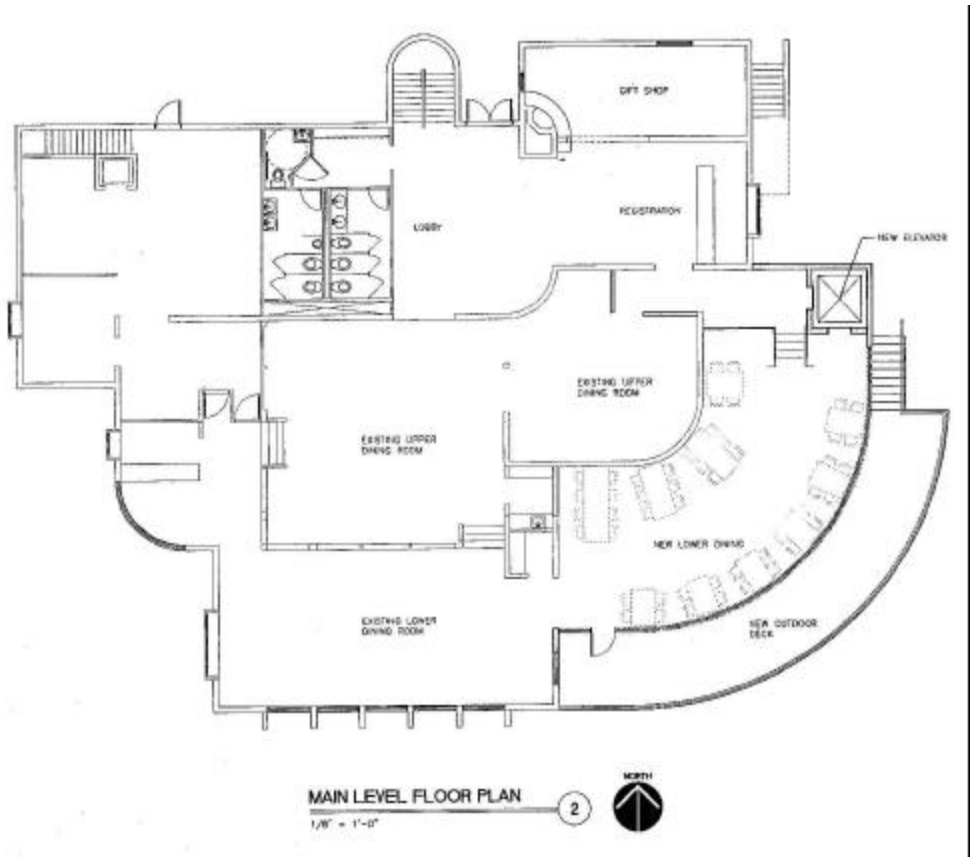
Lodge. Rehabilitation of the Far View Lodge would expand the dining facilities and increase amenities to visitors. Indoor dining facilities would be enlarged by expanding the Far View Lodge lower dining area and increasing seating capacity to 48, providing window seating for half of the additional seats, and constructing a new outdoor deck (see Figure 7, Lodge Main Floor Plan - Alternative C). By transferring visitor reception services to a different facility, dining and visitor services would be more efficient due to reconfiguration of the interior space.

Expansion of the lodge would include enlarging the lounge/multi-purpose room and a new outdoor deck on the upper level. To comply with the Americans with Disabilities Act, an elevator would be added; new space and a viewing area would be located east of the meeting room, and an accessible restroom added. All levels of the lodge would be fully

accessible to all visitors and staff. Exterior repairs and renovations would improve the building's aesthetics as described for in Alternative B.

The estimated additional area to be disturbed as a result of modifications to the lodge includes 1,600 square feet for expansion and the construction of an Americans with Disabilities Act-compliant elevator and the addition of five pylons to be used for replacement of the deck.

Figure 7. Lodge Main Floor Plan - Alternative C



Lodging Units. Existing modular-design lodging units would be demolished, and new lodging units, with the opportunity to be operated year-round would be rebuilt. The construction would include 12 to 25 consolidated overnight lodging units, with the remaining units distributed in buildings of various sizes. The total number of units would remain at 150. Newly constructed units would be planned to minimize ground disturbance by using existing building locations where feasible. Those areas not used for new construction would be reclaimed and revegetated. Lodging units meeting all Americans with Disabilities Act standards would be available.

Site design and layout features would increase open space and landscaping to improve the visitor experience and enhance scenic views. Interpretive themes of the park would be incorporated throughout courtyards and other communal spaces.

Each lodging unit would have a telephone and fire alarm communication system. Fire management and emergency vehicle access improvements and facility design would provide adequate defensible space as described in Alternative B.

Construction of the new lodging units would be phased over time so that a portion of the lodging units would always be available for use.

Wastewater Treatment Facility. Under Alternative C, wastewater from the new lodging facilities would be routed and treated similarly as described under Alternative B. Lateral lines would be incorporated into the design of the new lodging units and discharged into a newly constructed Far View tertiary wastewater treatment facility. Development of a new wastewater treatment facility under Alternative C is similar as described above for Alternative B.

Summary of Responsibilities and Costs. The financial and operational responsibilities of the concessioner and the National Park Service will be defined in the new concessions contract, expected to be completed during 2004. The National Park Service would be responsible for construction of new sewer laterals and construction and operation of the new wastewater treatment facility. The improvements associated with Alternative C would cost approximately $18,496,000, of which, about $2,125,000 would be allocated to upgrading the wastewater treatment facility.

ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Under Alternative D, a new lodge and lodging units with the potential for year-round use would be constructed, the existing lodge adapted primarily for National Park Service administrative use, and a demolition plan established for the existing lodging units. The newly constructed lodge, lounge, and lodging units would be combined into two buildings, designed to be more compatible with the park's theme, history, and architecture.

Site Plan. The architectural design and layout of a new lodge and lodging units would change views of the Far View lodging complex from the main park road and some of the existing views of the surrounding landscape from building interiors.

The site plan incorporates more open space than the current configuration, providing natural infiltration to control storm water runoff and conserve water.

Visitor transit and parking lots would be reconfigured to provide more pronounced vehicle destinations. Pedestrian pathways would be integrated with a series of courtyards, interpretive areas, and landscaped open space (see Figure 8).

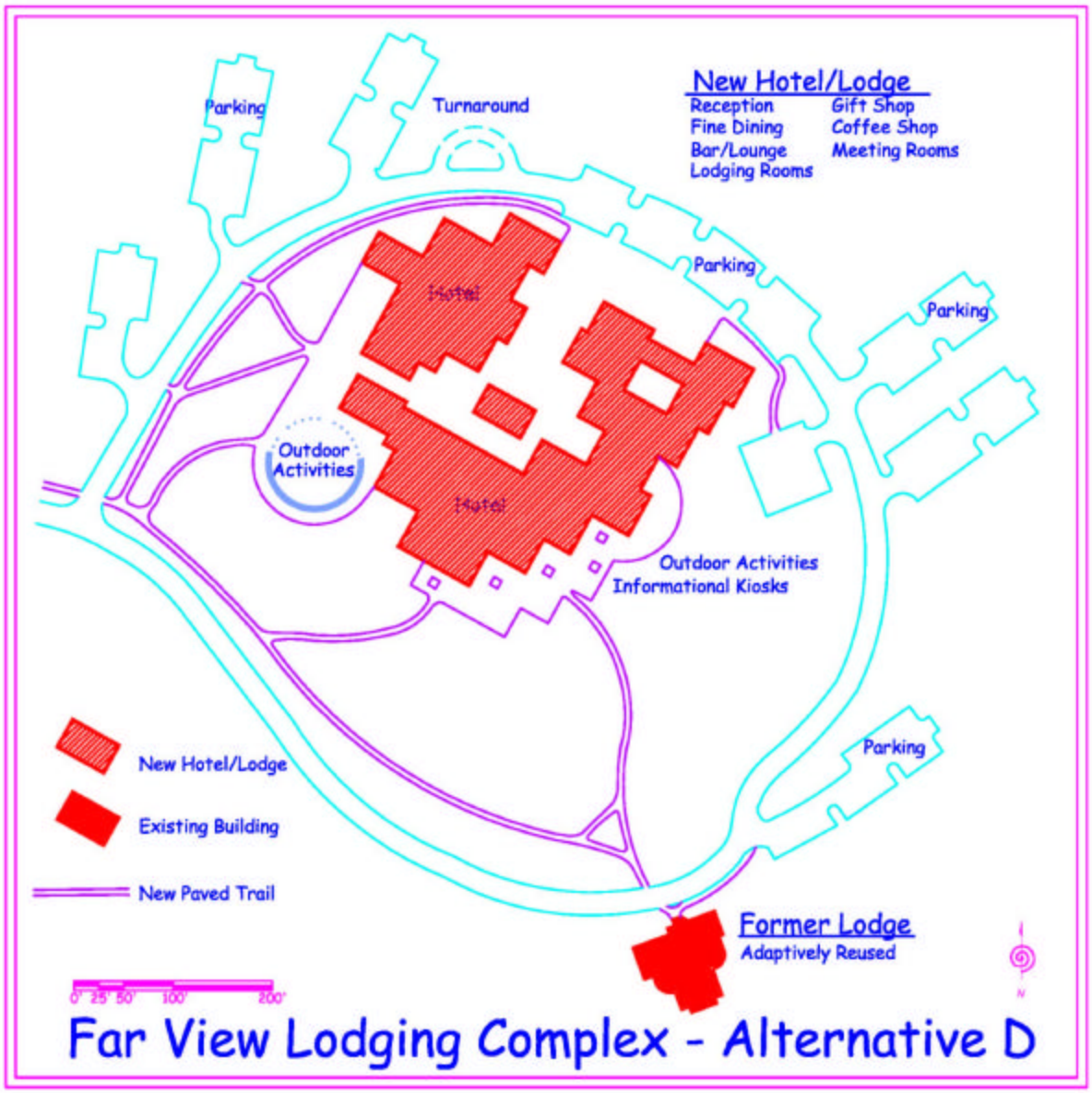
Lodge. The lodge functions would be consolidated in one building located near the center of the Far View lodging complex. The lodge would feature a new visitor reception area, gift shop, lounge, meeting rooms and a formal dining area. Visitor reception and dining service operations would be more efficient and would offer increased amenities. A coffee shop would be located in the central courtyard.

Additional outdoor park interpretive areas in the form of courtyards, plazas, and/or transit sites would be incorporated into the site plan. The existing Far View Lodge would be adapted for administrative National Park Service use. An Americans with Disabilities Act-compliant elevator would be installed, as well as modifications to make the restrooms and all levels of the lodge Americans with Disabilities Act-accessible.

Lodging Units. The existing lodging units would be demolished. Newly constructed lodging units would be functionally integrated with the new central lodge facility. There would be 150 overnight lodging units within a centralized facility, and lodging units fully compliant with Americans with Disabilities Act standards would be available. The architectural design of the new facility would be similar to Alternative B.

Each lodging unit would have a telephone and fire alarm communication system. Fire management and emergency vehicle access improvements and facility design would provide adequate defensible space as described in Alternative B.

FIGURE 8. PLAN VIEW ALTERNATIVE D



Wastewater Treatment Facility. Under Alternative D, wastewater from the new lodging facilities would be routed and treated similarly as described under Alternative B. Lateral lines would be incorporated into the design of the new lodging units and discharged into a newly constructed Far View tertiary wastewater treatment facility. Development of a new wastewater treatment facility under Alternative D is similar as described above for Alternatives B and C.

Summary of Responsibilities and Costs. The financial and operational responsibilities of the concessioner and the National Park Service will be defined in the new concessions contract, expected to be completed during 2004. The National Park Service would be responsible for construction of new sewer laterals and construction and operation of the new wastewater treatment facility. The improvements associated with Alternative D would

cost approximately $18,496,000, of which, about $2,125,000 would be allocated to upgrading the wastewater treatment facility.

Mitigation Measures

For all action alternatives, best management practices and mitigation measures would be used to prevent, offset, or minimize potential adverse effects associated with the project. These practices and measures would be incorporated into the project construction documents, plans and contracts. Implementation of the mitigation measures would be assumed by the concessioner, with the exception of the new tertiary wastewater treatment plant, which would be the National Park Service' responsibility.

Resource protection measures undertaken during project implementation would include, but would not be limited to, those listed below in Table 3. The impact analyses in the "Affected Environment and Environmental Consequences" section were prepared assuming that these best management practices and mitigation measures were implemented as a part of the action alternatives.

TABLE 3. MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Resource Area Potentially Affected	Mitigation Measure or Best Management Practice
Natural Resources	Shield downlighting and employ focused beam technology to reduce fugitive light emissions.
	Install silt fences and reseeding soils with native plant species prior to the first growing season after construction is completed, and protecting soils with straw or matting until a vegetative cover was established. Landscaping with native woody vegetation and trees would take place after construction.
	Control weeds.
	Wash equipment so that it is free of mud and weed seeds prior to bringing it into the park.
	Delineate construction boundaries with fencing.
	Establish parking and storage areas.
	Penalize contractors who disturb vegetation outside of the defined boundaries.
	Soils in construction areas that are already infested with non-native plants will be kept on-site and measures taken to prevent transplant to other sites.
	Install silt fencing, revegetate disturbed areas, and protect barren soil from rain splash and wind erosion to limit sediment delivery to drainages.
	Revegetate eroded drainages to slow flow velocity, reduce erosion and sediment delivery downstream.
	Construct energy dissipating devices or structures to reduce the erosive capacity of the flows.
	Install detention/retention ponds to remove sediment from existing flows.
	Construct parking areas and sidewalks with porous (pervious) material sections which would allow water to enter the underlying soils to reduce stormwater quantity.
	Reduce hydrocarbon content by including a vault separator that slows the flow, allowing hydrocarbons to rise and be captured for disposal.

TABLE 3. MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Resource Area Potentially Affected	Mitigation Measure or Best Management Practice
	Food storage and trash receptacles would be designed to minimize changes to wildlife behavior and health.
Cultural Resources	To protect archeological resources, best management practices would include the following:
	Detailed archeological surveys would be conducted of the areas to be disturbed.
	An archeologist would be assigned to the site during all earth-moving activities to monitor for previously undetected subsurface resources. If a site was found, a mitigation plan would be developed in consultation with the state historic preservation officer.
	Daily tailgate meetings would be held with construction crews. These would include discussions of the importance of protecting the park's resources, the ban on collecting artifacts, and the need to notify the onsite archeologist if any resources were found.
	Any artifacts recovered during construction would be preserved and curated according to NPS and state historic preservation officer requirements.
Human Environment and Visitor Use	Whenever possible, rehabilitation and construction work would be conducted during the park's low visitation period.
	Construction would be phased so that lodging would still be available to visitors during the construction period.
	Protective materials and fencing would be used around construction sites.
	Visitor safety signage would be provided, along with marked and signaled vehicle detours. Enclosed pedestrian walkways would be provided as needed.
	Daily worker safety tailgate meetings would emphasize travel safety, call attention to the presence of children in the complex, and remind workers that other drivers may be focused more on the scenery than on the traffic.
	Speed limits would be strictly enforced for construction workers and drivers of construction trucks. It may also be appropriate to lower speed limits around Far View while construction is in progress.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative that will best promote the national environmental policy expressed in the National Environmental Policy Act. The environmentally preferred alternative would cause the least damage to the biological and physical environment, and would best protect, preserve, and enhance historical, cultural, and natural resources.

Section 101(b) of the National Environmental Policy Act identifies six criteria to help determine the environmentally preferred alternative. The act directs that federal plans should:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.
- Preserve important historical, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice.
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

By improving fire management and emergency vehicle access and by making the lodge and lodging units compatible with the park's theme, history, and architecture, all of the action alternatives (i.e., Alternatives B, C, and D) would be more effective in providing "safe, healthful, . . . and esthetically . . . pleasing surroundings" than Alternative A.

The wastewater treatment system upgrade and installation of safety communication and fire alarm systems in each of the action alternatives also would support this objective.

When viewed in light of the criteria presented above, none of the action alternatives has a clear advantage over any of the others. Under implementation of each action alternative, there are tradeoffs that generally would make the impacts on the environment relatively equal. Examples of how the alternatives are similar with respect to the environmentally preferred criteria include:

- Each of the action alternatives would better attain "beneficial uses of the environment" as the site plans would allow visitors to be immersed in park resources through

interpretive opportunities across the complex and in the lodge and lodging units. The site layout for each of the alternatives would feature the ability to experience the viewshed from across the complex in a manner consistent with the name "Far View."

- The environment within the lodging complex under each of the action alternatives would support "diversity and variety of individual choice" by virtue of the unique opportunities to choose different locations within the complex (e.g., close to or away from the reception area or interpretive centers depending on a visitor's desire).
- Each of the action alternatives would include the installation of energy- and resource-efficient appliances and materials, thus providing conservation and sustainability benefits.

With the implementation of any of the action alternatives, the National Park Service would be better able to:

- Protect the resources of the park, improving its ability to serve as a “trustee of the environment for succeeding generations.”
- Provide emergency response throughout the lodging complex, which will help provide visitors with “safe, healthful . . . surroundings.”

HOW THE ALTERNATIVES MEET THE OBJECTIVES OF THE PROPOSED ACTION

Six goals for the rehabilitation or replacement of the lodge and lodging units were identified in the “Purpose and Need for Action” section. The ability of each of the alternatives to meet each of these goals is summarized in Table 4. As shown in the table, each of the action alternatives would meet all of the objectives, while Alternative A would not meet any of the objectives.

TABLE 4. OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM

Far View Lodging Objective	Alternative A	Alternative B	Alternative C	Alternative D
Enhance the unique visitor experience at Far View by providing the opportunity for year-round lodging.	No	Yes	Yes	Yes
Provide a range of high quality overnight visitor accommodation and ancillary services.	No	Yes	Yes	Yes
Address the immediate visitor health and safety problems that exist due to inadequate access and safety communications equipment.	No	Yes	Yes	Yes
Enhance natural resource protection.	No	Yes	Yes	Yes
Meet the requirements of the Americans with Disabilities Act and all current building code requirements.	Partially	Partially	Fully	Fully
Establish a centralized visitor destination that is architecturally and visually compatible with the surrounding landscape, incorporates sustainable design concepts, and is consistent with the park's general management plan.	No	Yes	Yes	Yes

SUMMARY OF IMPACTS

Table 5 provides a brief summary of the effects of each of the alternatives on the impact topics that were retained for analysis. More detailed information on the effects of the alternatives is provided in the "Affected Environment and Environmental Consequences" section.

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
Energy efficiency and conservation potential	The effect of Alternative A on the energy efficiency and conservation potential of Mesa Verde National Park would be long-term, adverse, and minor.	Energy conservation measures and upgrades to appliances that would be implemented with Alternative B would result in long-term, minor, beneficial effects on energy efficiency and conservation potential.	The construction of new lodging units would allow the use of the most innovative, energy-efficient design and materials. Lodge upgrades would contribute to this benefit, but retrofitting constraints would lessen the benefit compared to the upgrades in newly constructed units. This benefit would be partially offset with energy-intensive winter use, but would result in an overall long-term, minor to moderate beneficial impact on energy efficiency and conservation potential.	The construction of new lodging units would allow the use of the most innovative, energy efficient design and materials. Lodge upgrades would contribute to this benefit, but retrofitting constraints would lessen the benefit compared to the upgrades in newly constructed units. Winter use and the increased energy demands associated with winter would diminish the intensity of this benefit, but still result in a long-term, overall minor beneficial impact on energy efficiency and conservation potential.
Soils	Alternative A would continue current use patterns and involve no new construction at the Far View lodging complex. As such, this alternative would have negligible, adverse, long-term impacts to soils resulting from the continued compaction of soils along social trails and informal parking areas.	Because best management practices would be used to minimize compaction and/or erosion during and after construction, the short-term effects on soil would be local, adverse, and negligible.	Because best management practices would be used to minimize compaction and/or erosion during and after construction, the short- and long-term effects on soil would be local, adverse, and minor.	Because best management practices would be used to minimize compaction and/or erosion during and after construction, the short-term effects on soil would be local, adverse, and negligible.
Natural soundscape	Alternative A would have a negligible, short-and long-term, local adverse impact on the natural soundscape at the Far View lodging complex in Mesa Verde National Park.	Alternative B would have a short- and long-term, local, negligible to moderate adverse effect on the natural soundscape as a result of noise or disturbance associated with rehabilitation of the lodging units. The duration of the higher intensity adverse impacts would	Alternative C would have a short- and long-term, local, negligible to moderate adverse effect on the natural soundscape as a result of noise or disturbance associated with construction of the new lodging units. The duration of the higher intensity adverse impacts	Alternative D would have a short- and long-term, local, negligible to moderate adverse effect on the natural soundscape as a result of noise or disturbance associated with demolition and construction of the lodging units. The duration of the higher intensity adverse

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
		be short and limited to daytime hours when impacts to the natural soundscape would be considered more accep table. Winter use of the lodging complex would have a short- and long-term, local, negligible adverse impact on the natural soundscape.	would be short and limited to daytime hours when impacts to the natural soundscape would be considered more accep table. Winter use of the lodging complex would have a short- and long-term, local, negligible adverse impact on the natural soundscape.	impacts would be short and limited to daytime hours when impacts to the natural soundscape would be considered more acceptable. Winter use of the lodging complex would have a short- and long-term, local, negligible adverse impact on the natural soundscape.
Vegetation	Alternative A would result in few changes to the condition of native vegetation at Far View lodging complex. The effects on vegetation that would result from trampling along social trails and maintaining existing facilities at the lodging complex would continue to be minor, adverse, long-term, and local.	Alternative B's effects on vegetation would be minor (short-term) and negligible (long-term), adverse, and local. These impacts would be associated with displacement and/or trampling of individual plants during construction activities.	Using conventional vegetation conservation methods and mitigation measures, the short-term effects on vegetation that would result from Alternative C would be minor, adverse, and local. These impacts would be associated with displacement and/or trampling of individual plants during construction activities. In the long term, negligible, beneficial, local impacts would result as native species would be used for revegetation and social trailing would be reduced.	Alternative D would result in long-term, adverse, minor, local impacts as a result of displacing and damaging small areas of vegetation during construction operations. In the long-term, once construction has ended, negligible, local benefits would accrue as a result of the consolidated building's more concentrated footprint, which would allow a greater area to be revegetated with native vegetation.
Water resources	Alternative A would continue to generate long-term, local, moderate adverse effects resulting from treated effluent and algaecide discharges. In addition, adverse effects caused by uncontrolled stormwater runoff would be negligible to minor, long-term, and local. This alternative would not	Alternative B would result in long-term, local, moderate beneficial effects to water resources by eliminating wastewater discharges into Little Soda Canyon. Long-term, negligible to minor benefits would be achieved by installation of stormwater management measures within the project area.	Alternative C would result in long-term moderate beneficial effects to water resources by eliminating effluent discharges into Little Soda Canyon. Long-term, local, negligible to minor benefits would accrue as a result of improved stormwater management measures within the project area. Long-term,	Alternative D would produce long-term, local, moderate benefits by eliminating treated effluent and algaecide discharges into Little Soda Canyon. Long-term, negligible to minor benefits would result from improved stormwater management in the project area. Long-term, negligible adverse effects on the

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
	affect existing water usage or quantity of wastewater flows.	Long-term, negligible adverse effects on potable water demand would be generated by increased overnight stays. The short-term adverse effects of Alternative B would result from construction disturbance. Best management practices would limit the local effects on water quality to negligible to minor.	negligible adverse effects on potable water demand would result from potential year-round operation of the lodge. The short-term adverse effects of Alternative C would result from construction disturbance. Best management practices would limit the local adverse effects to negligible to minor.	park's demand for domestic water would result from an increase in total annual overnight stays. The short-term adverse effects associated with Alternative D would result from demolition, construction, and reclamation activities. Best management practices would limit the local adverse effects to minor.
Wildlife and habitats	Alternative A would not affect existing wildlife populations or habitat conditions in Mesa Verde National Park.	Alternative B would have a temporary, local, negligible adverse effect on wildlife and habitats as a result of noise or disturbance associated with rehabilitation of the lodging units. The activities would not prevent wildlife from undertaking its normal foraging, breeding, or resting activities in surrounding habitats. Winter use of the lodging complex would represent a negligible to minor, local, long-term adverse impact on some wildlife individuals that may currently use the area during the winter season.	Alternative C would have minor, local, short- and long-term adverse impacts on wildlife and habitats as a result of disturbance during construction and the introduction of winter use to the lodging complex.	Alternative D would have minor, local, short- and long-term adverse impacts on wildlife and habitats as a result of disturbance during construction of the new building and the introduction of winter use to the Far View lodging complex.
Cultural resources	Continuation of existing conditions would have a negligible adverse effect on archeological resources. Although regionally moderate adverse cumulative impacts are	With mitigation, implementation of Alternative B would have local, long-term, negligible to minor adverse impacts on archeological resources. Given the relatively local nature of the project, the	With mitigation, implementation of Alternative C would have a local, long-term, moderate adverse impact on archeological resources because of the amount of ground modification, changes	With mitigation, the adverse effects of Alternative D on archeological resources at Far View would be local, long-term, and minor to moderate in intensity because of the amount

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
	indicated, the contribution of Alternative A to these cumulative impacts would be negligible.	amount of area affected, and the existing amount of disturbance, the contribution of Alternative B to regional cumulative effects would be negligible.	in site layout, and the potential for buried resources. The new design would enhance the existing landscape and make the buildings at Far View more compatible with the park's architectural themes, resulting in a long-term, local, and moderately beneficial effect. Alternative C would have a negligible contribution to regional cumulative effects.	of ground disturbance and potential for buried resources. Landscape effects would be long-term, local, and moderately beneficial by making the site more compatible with the park's architectural themes. Because of the small area affected and the existing disturbance, Alternative D would have a negligible contribution to regional cumulative effects on cultural resources.
Accessibility for individuals with impaired mobility	Under Alternative A, existing conditions would constitute a long-term, moderate adverse impact. Cumulative impacts would be negligible.	Alternative B would have minor beneficial effects on accessibility for visitors and staff (some areas would still be relatively inaccessible). Cumulative impacts would be beneficial, but minor.	Alternative C would have moderate beneficial effects on accessibility for visitors and staff because more of the lodging units and facilities would be accessible. Cumulative impacts would be beneficial, but minor.	Alternative D would have moderate beneficial effects on accessibility for visitors and concession and park staff because the lodging complex would be more accessible. Rehabilitation of the lodge would involve minimal work to meet Americans with Disabilities Act accessibility requirements, resulting in a minor benefit for park employees. Cumulative impacts would be beneficial, but minor.
Economics and socioeconomics	No action would have short-term, negligible adverse effects. Long-term effects on revenues from the Far View lodging complex would be negligible. In the long term, there would be minor, adverse effects on the availability of lodging for visitors, and minor adverse	In the short-term, Alternative B would have negligible adverse effects on economic and socioeconomic conditions in the county. Long-term adverse effects on revenues from the Far View lodging complex also would be negligible. In the short-term, there would be negligible, adverse	The effects of Alternative C would range from negligibly adverse to moderately beneficial , with respect to the aspects of economic and socioeconomic conditions that were analyzed above. The greatest impact would likely be the moderate short-term beneficial effect on the local	The effects of Alternative D would be similar to the effects of Alternative C with respect to economics and socioeconomic conditions in Montezuma County.

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
	effects on the concessioner's costs of doing business in Mesa Verde National Park.	effects on the availability of lodging for visitors as a result of renovation work. Compared to Alternative A, Alternative B would have negligible adverse effects on revenues from lodging and on the county's lodging tax base. There would be a minor, adverse effect on the concessioner's costs of doing business in Mesa Verde National Park.	construction industry, with the minor long-term benefits to the county tax base next in magnitude. The concessioner's cost of doing business also would see minor long-term benefits. The availability and cost of lodging at locations outside the park would experience a negligible adverse effect, as would the cost and availability of lodging to the visitor.	
Natural lightscape (night sky)	Alternative A would have a long-term, local, negligible to minor, adverse effect on the natural lightscape and the ability to observe night skies in and from the Far View lodging complex. Its effect outside of the complex would be negligible.	Alternative B would have a long-term, beneficial effect that would be negligible to minor during the primary visitor use months as a result of upgrades to lighting fixtures and the use of new technology that would limit fugitive light emissions. It would have an adverse, minor, long-term effect on the Far View lodging complex natural lightscape with the introduction of artificial light in the winter months.	Primary visitor use season impacts to the natural lightscape associated with Alternative C, namely negligible, long-term, local and beneficial effects, would be similar to those described for Alternative B at the Far View lodging complex. The effects on the natural lightscape in wintertime would be adverse, minor, and long-term, and would be similar to the impacts of Alternative B.	Alternative D would not be likely to have an effect on the natural lightscape different than Alternative A in the primary visitor use months because the decrease in the number of exterior lighting units would be offset by fugitive light emissions from the concentration of numerous windows in the lodging building. Wintertime effects would be adverse, minor, and long-term both within the complex and from distant views of the mesa.
Park operations	Alternative A would have short- and long-term, negligible to minor adverse effects on park operations because of the demands for maintaining the lodging units, walkways, and parking areas to keep them in	Alternative B would have long-term, minor, beneficial and adverse effects on park operations resulting from improved response to emergencies, reduced costs for maintenance, more effective	The impacts of Alternative C would be similar to those of Alternative B. Compared to Alternative B, adverse effects on park ranger and interpretation staff from increased visitor	Alternative D impacts would be similar to Alternative C, with added minor long-term benefits resulting from consolidation of the units and lodge and improved emergency vehicle access.

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
	service. Cumulative impacts would be long-term, adverse, and have a negligible to minor effect on park operations.	wastewater treatment, and lower life-cycle costs. A minor, long-term, adverse effect would occur because of the increased need for snow plowing. Cumulative impacts related to future uses, would be beneficial to park operations.	demands for interpretive programs and concessioner lodging services would be minor. Moderate beneficial effects would result from reduced maintenance and lower life-cycle costs in a newly constructed complex.	
Public health and safety	The effects of Alternative A would depend on the number and location of lodging units that remain in service. If all units remained in good repair, there would be negligible to minor adverse effects on public health and safety with regard to incident response, access, and accident safety.	Alternative B would be beneficial to public health and safety and would include the following: • A long-term, minor beneficial effect on the park's emergency response ability. • A potential for long-term, minor to moderate beneficial effect for safety protection to visitors and employees as a result of upgrading the safety communication and alarm systems. • More regular vegetation management associated with the renovated structures would have a long-term, minor to moderate beneficial effect by reducing the threats from wildland fires. • A long-term, beneficial, minor effect on the safety of park visitors and employees with limited mobility or other disabilities. • Construction-related traffic	Alternative C would have a negligible to minor, long-term, adverse effect on the ability of the park to provide emergency response because there are several more buildings, making it more difficult to quickly access buildings that are further from the main access road. Increased risk of short-term congestion in the vicinity of the road-side parking system increases these adverse effects. This would be countered by the long-term, minor to moderate beneficial effects provided by emergency access to the lodge and buildings configured around public spaces, thereby minimizing the spread of structural and wildland fire. Other effects on public health and safety would be similar to those described for Alternative B.	Alternative D would have a long-term, minor, beneficial effect on the ability of the park to provide emergency response. Consolidating the lodge and the lodging units would improve emergency and Americans with Disabilities Act-access. This would reduce the overall risk of accidents and would result in long-term, moderate, beneficial effects to public health and safety. Other effects on public health and safety would be similar to those described for Alternative B.

TABLE 5. COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A	Alternative B	Alternative C	Alternative D
		would have short-term, negligible to minor adverse effects on public health and safety.		
Sustainability and long-term management	Alternative A would continue to have a long-term, moderate adverse impact on sustainability and long-term management at the Far View lodging complex in Mesa Verde National Park.	Alternative B would have a long-term, minor beneficial effect on sustainability and long-term management in the Far View lodging complex. This would occur as a result of the opportunity to replace some non-sustainable materials. Winter use would represent a negligible to minor, local, adverse impact.	Alternative C would have moderate, long-term beneficial effects on sustainability and long-term management in the Far View lodging complex., Alternative C also would have cumulative effects similar to Alternative B, but with an even greater proportional cumulative contribution to sustainability and long-term management.	Similar to Alternative C, Alternative D would have moderate, long-term beneficial effects on sustainability and long-term management in the Far View lodging complex.
Visitor understanding and appreciation	No action would have a long-term, minor adverse effect on visitor understanding and appreciation. Cumulative effects would be minor and adverse.	Alternative B would have long-term minor to moderate beneficial effects on visitor understanding and appreciation, while minor adverse impacts of traffic congestion, narrow roadways, and disparate building arrangements would occur. Cumulative effects would be both beneficial (minor) and adverse (negligible).	Alternative C would have long-term, moderate beneficial effects on visitor understanding and appreciation, as a result of better wayfinding and signage, while minor adverse impacts of traffic congestion, narrow roadways, and disparate building arrangements would occur. Cumulative effects would be both beneficial (moderate) and adverse (negligible).	Alternative D would have long-term, moderate beneficial effects on visitor understanding and appreciation. Alternative D would provide an incrementally higher benefit that Alternative C, but would not be greater than moderate. Cumulative effects would be moderately beneficial.

ALTERNATIVES CONSIDERED BUT DISMISSED

During the planning process, several lodge and lodging unit rehabilitation or replacement designs were considered but eliminated as alternatives. Four variations of alternatives were considered but dismissed prior to the preparation of this draft environmental assessment. These alternatives included: rebuild the lodging facilities at the Spruce Tree site; rehabilitate and expand the lodge with no change to the units; no change to the lodge and rehabilitate the units; and rehabilitate the lodge and remove the units. The reasons for elimination of these alternatives or components are described below.

Reestablish the Lodging Facilities at the Spruce Tree Site. Although constructing a lodge at the Spruce Tree site would re-establish a use that existed there in the early years of the park, this would also increase visitor traffic and congestion within a prime cultural resource area. Intensifying the land use near the Spruce Tree site would potentially affect sensitive archeological resources and the natural soundscape. This location also was dismissed from further consideration because it would not be consistent with the park's cultural resource management objective.

Rehabilitate and Expand the Lodge with No Change to Lodging Units. The lodging units would continue to deteriorate and fewer units would be available for use. The existing modular design of the units is incompatible with the parks' Puebloan theme. Americans with Disabilities Act-accessible units would be available, but not all outside public areas or pedestrian pathways would be in compliance with the Americans with Disabilities Act accessibility standards. This alternative was not considered because it would not meet public health and safety objectives associated with the need for action.

No Changes to the Lodge and Rehabilitate the Lodging Units. The lodge would not provide minimum Americans with Disabilities Act accessibility; thus not all areas of the lodge would be accessible to people with impaired mobility. This alternative was not considered further because it would reduce the quality of visitor use and experience and would not provide a quality dining experience for all visitors.

Rehabilitate the Lodge and Remove the Lodging Units. If removed, a valuable visitor use and experience would be lost, and the Far View lodging complex would no longer be consistent with the park's general management plan. Providing a lodging experience at Far View outweighs the benefits of reclaiming the area as undeveloped open space.

As a result of the public involvement process, several components to enhance the visitor experience at the Far View lodging complex were suggested. These components include a swimming pool, health and wellness facilities, and a site plan design that includes the visitor amenities at Far View Terrace.

The reasons for elimination of these enhancements are described below.

Swimming pool. Visitors have expressed an interest in having a swimming pool at the Far View lodging complex. A pool would provide additional recreational opportunities for families staying at the park. However, more staffing would be required to operate and maintain the pool,

and the pool would conflict with the park's water conservation objective. This feature was not given further consideration because it is not in keeping with the park's purpose and world heritage theme, and there would be additional public health and safety concerns.

Health and wellness facilities (sauna, hot tub, massage room, and fitness facilities). These facilities attract visitors or a specific group of visitors, and could be used to market the Far View lodging complex. Concerns were expressed over the increase in the use of energy, increased public health and safety concerns, and maintenance required to operate these visitor amenities. The new concept design could incorporate one or two of these features, but due to the additional staffing and square footage required, not all of these amenities would be provided.

Site plan and design that include the visitor amenities at Far View Terrace. The Far View Terrace facilities accommodate parking and dining for large tour groups. The Terrace restaurant also offers visitors to Far View a more informal dining experience than provided at the lodge. Facilities at Far View Terrace will be considered in the transportation plan environmental impact statement and were therefore not addressed in this environmental assessment.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

METHODOLOGY

GENERAL EVALUATION METHOD

For each impact topic, the analysis includes a brief description of the affected environment and an evaluation of the effects of implementing each alternative. These discussions are shaped in part by laws, regulations, and policies relevant to each impact topic, as listed in Table 1. The impact analyses were based on information provided by park staff, relevant references and technical literature citations, and subject matter experts. The impact analyses involved the following steps.

The issues of concern were defined based on public and internal scoping.

The geographic area that could be affected was identified.

The resources that could be affected within the identified geographic area were described and compared to the area of potential effect .

An alternative's effects were identified, in comparison to the baseline represented by Alternative A, to determine the relative change in resource conditions. The effects were characterized, using the following terms, to determine whether:

- The effect would be beneficial or adverse.
- The intensity of the effect would be negligible, minor, moderate, or major. Specific impact topic thresholds for each of these classifications are provided in the methodology section for each impact topic. Threshold values were developed based on federal and state standards, consultation with regulators from applicable agencies, and discussions with subject matter experts.
- The duration of the effect would be short-term or long-term. Unless a specific definition related to a particular impact topic is provided, the following will be used.
    - A short-term effect typically lasts only a few days or weeks, but could last up to a year.
    - A long-term effect would last more than a year, or would recur periodically over several years.
- The effect would be a direct result of the action or would occur indirectly because of a change to another resource or impact topic. An example of an indirect impact would be increased mortality of an aquatic species that would occur because an alternative would increase soil erosion, which could in turn reduce water quality.

- Impairment would occur to resources and values that are considered necessary and appropriate to fulfill the purposes of Mesa Verde National Park.

- Cumulative effects would occur by evaluating the alternative's effect in conjunction with past, current, or foreseeable future actions at Mesa Verde National Park and in the region.

IMPAIRMENT ANALYSIS METHOD

Management Policies 2001 (NPS 2000b) requires analysis of potential effects to determine whether actions would impair national park resources or values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, actions that would adversely affect park resources and values.

These laws give the National Park Service the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the federal courts) that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Impairment may result from NPS activities in managing the park, from visitor activities, or from activities undertaken by concessioners, contractors, and others operating in the park.

An impact on any park resource or value has potential to constitute impairment. However, an impact would be most likely to constitute impairment if it affected a resource or value whose conservation was:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;

- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or

- Identified as a goal in the park's general management plan or other relevant NPS planning documents.

A determination on impairment is included in the impact analysis section for all impact topics relating to Mesa Verde National Park resources and values. It is based on the impact-topic-specific definition of impairment that is provided in each resource and value impact topic methodology section.

CUMULATIVE EFFECTS ANALYSIS METHOD

The Council on Environmental Quality (1978) regulations for implementing the National Environmental Policy Act requires assessment of cumulative effects in the decision-making process for federal actions. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 *Code of Federal Regulations* 1508.7). Cumulative effects are considered for both Alternative A and the three action alternatives.

Cumulative effects were determined by combining the effects of each alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions at Mesa Verde National Park and in the surrounding region. Other actions with potential to have a cumulative effect in conjunction with this project include the following.

- Mesa Verde Cultural Center and Visitor Center
- Mesa Verde Housing Plan
- Park Construction Projects
- HVAC Replacement Plan
- Mesa Verde Fire Management Plan
- Mesa Verde Visitor Distribution and Transportation Plan

ENERGY EFFICIENCY AND CONSERVATION POTENTIAL

AFFECTED ENVIRONMENT

The existing lodging units have poor energy efficiency. They are not well insulated or weather tight, and they lose heat rapidly when it is cold, particularly during windy conditions. Park maintenance staff have noted that the heating systems are hard-pressed to keep the units warm during spring and fall cold snaps and probably would be unable to meet winter heating needs (none of the existing lodging units are used in the winter). Currently, none of the lodging units nor the lodge employ water saving appliances such as low-flow showerheads or toilets, resulting in greater water consumption than necessary.

METHODOLOGY

Impacts on energy efficiency and conservation potential were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for energy efficiency and conservation potential are presented below. Note that the analysis for this impact topic compares the alternatives to a universal standard of desired efficient energy use and maximizing the conservation potential, rather than to Alternative A. This allows the analysis to identify the shortcomings of the current condition in the analysis of Alternative A, while making the analyses for the other alternatives relative to a common standard, namely minimizing energy use and maximizing resource conservation.

Negligible: Energy efficiency and conservation potential would not be affected, or effects would not be measurable outside of normal variability. Any change in the energy efficiency and conservation potential would be slight, and would occur in a relatively small area.

Minor: Effects on energy efficiency and conservation potential would be small but detectable on a park-wide basis. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.

Moderate: Effects on energy efficiency and conservation potential would be readily apparent on a park-wide basis. Mitigation would probably be necessary to offset adverse effects and would likely be successful.

Major: Effects on energy efficiency and conservation potential would be readily apparent, and would substantially change the amount of energy used in a large area in and out of the park. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

Energy efficiency and conservation potential are not considered to be resources that are protected by the Organic Act. Therefore, energy efficiency and conservation potential do not warrant consideration of impairment.

The geographic area evaluated for impacts on energy efficiency and conservation potential included the Far View lodging complex, the Far View secondary wastewater treatment facility/ponds, including its access road, and the park as a whole. Cumulative effects that would occur both within and outside of these areas were determined based on the "Cumulative Effects Analysis Method" section.

Issues regarding energy efficiency and conservation potential that were identified and addressed in the impact analysis included:

- Concern that energy requirements are currently high and an inadequate effort to maximize conservation potential exists because of inefficiencies related to the age, materials and design of the lodging complex,
- Concern that the project could change the daily use and demand for energy, and
- Concern that there may be an overall increase in energy usage if the complex was to incorporate year-round operation.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

As noted in the Affected Environment description for this impact topic, current conditions do not use energy efficiently nor is there much realization of conservation potential at the Far View lodging complex. The lodging units and lodge would continue to use energy inefficiently because of the lack of insulation and out-dated/inefficient heating appliances. The potential for water conservation would not be realized without the use of water-saving appliances such as low-flow showerheads or toilets. The effect on the energy efficiency and conservation potential as a result of Alternative A would be minor, adverse, and long-term. The adverse effect would be no more than minor because the lodging complex uses a relatively small portion of the energy and water consumed in the park.

Cumulative Effects

Changing energy demands would be associated with several potential future actions in and near Mesa Verde National Park. These include the transportation plan, which would include the goal of improving transportation-related energy efficiency, upgrades of the heating, ventilation, and air conditioning systems in the Administrative District, and constructing and operating a new cultural center near the park entrance.

In all of these actions, the National Park Service would strive to maximize energy efficiency and conservation potential. This would include incorporating construction and non-structural approaches to minimize energy use and conserve other resources. The result of these measures, in conjunction with Alternative A, would result in limited change in energy use in the park. Cumulatively, the energy efficiency and realization of conservation potential in Mesa Verde National Park that would occur under Alternative A would have a negligible effect on energy use regionally.

Conclusion

The effect of Alternative A on the energy efficiency and conservation potential of Mesa Verde National Park would be long-term, adverse, and minor. Cumulative effects would be negligible

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

The rehabilitation of the lodging units and lodge under Alternative B would incorporate numerous energy efficiency and conservation measures. These would include, but would not be limited to, the following:

- The buildings would be insulated to standards suitable for year-round use, capable of being used in the winter. This would include enclosing foundations and insulating crawl spaces and attic areas to withstand the park's cold winter environment.
- Walls would be weather-tight and well insulated. All openings where utilities enter the buildings would be sealed and insulated.
- The buildings would have dual-pane windows. Shades, awnings, and/or tinted films may be applied either externally or internally to windows to minimize solar heat gain in the summer.
- Buildings would maintain their current orientations so the sun would heat living areas by day during the winter when temperatures are cold and the sun is low.
- Plumbing would be insulated to withstand freezing temperatures.
- Energy-efficient lighting systems would be used in all exterior and interior applications.
- Appliances, including furnaces, hot water heaters, and refrigerators, would meet the latest energy-efficiency standards. All of these units would be more energy-efficient than the old appliances currently in the units.
- Showerheads and toilets would be replaced with low-flow units throughout the complex.

Alternative B would heat and deliver hot water, and heat living spaces and conserve that heat, more efficiently than the current system. The result would be a long-term, beneficial effect on energy efficiency and conservation potential. This benefit is based on the assumption that although winter use would create higher energy demands, state-of-the-art heating units would allow the additional energy to be used efficiently. Additionally, the conservation potential associated with energy and water use would be maximized compared to current conditions. The intensity of the beneficial effects on energy efficiency and conservation potential would be minor.

Cumulative Effects

Cumulative effects on energy efficiency and conservation potential would be similar to those described for Alternative A, although the effects of Alternative B would be slightly more beneficial. Overall, Alternative B's cumulative regional effect on energy efficiency and conservation potential would be still be negligible.

Conclusion

Energy conservation measures and upgrades to appliances that would be implemented with Alternative B would result in long-term, minor, beneficial effects on energy efficiency and conservation p otential. Cumulative effects would be negligible.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

The effects of Alternative C would be similar to those described for Alternative B, although because all the lodging units would be new, there would be even greater opportunity to achieve energy efficiency and maximize conservation potential. The improvements detailed in Alternative B would be implemented under Alternative C, but there would be no retrofitting to accommodate old buildings, except for the lodge. As a result, the energy efficiency and realization of conservation potential under Alternative C would be maximized and would represent a long-term, minor to moderate beneficial effect on energy efficiency and conservation potential in the park. The benefit, when viewed in terms of actual energy use, would be partially offset by increased energy use as a result of opening the complex during the winter season, when energy demands would be high. Operations and management strategies would be used to make decisions regarding how many units to keep open at particular times during the winter season depending on demand and need. These strategies would consider energy use and cost.

The energy and conservation upgrades in the lodge would contribute to the overall long-term benefit, although the magnitude of the benefit would be minor at the lodge because improvements would be retrofitted rather than installed as new.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B, with a slightly greater incremental benefit accruing under Alternative C because of the greater opportunities to maximize energy efficiency and conservation potential.

Conclusion

The construction of new lodging units would allow the use of the most innovative, energy-efficient design and materials. This would maximize the energy efficiency and conservation potential of Alternative C. This benefit would be partially offset by the introduction of energy-

intensive winter use resulting in an overall long-term, minor to moderate beneficial impact on energy use and conservation potential. Cumulative effects would be negligible.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Most effects of Alternative D would be similar to those described for Alternative C with regard to energy efficiency and conservation potential. However, because the lodging units would be consolidated into two central buildings, energy efficiency gains associated with heating and cooling connected, contiguous spaces would be offset with constraints on isolating and closing off portions of the building when demand does not warrant use (i.e., winter season when visitation drops). Overall, the new construction would provide the majority of the beneficial effect because it would allow use of the latest technology and advances in energy efficiency, thus representing a long-term, minor beneficial impact on energy use and conservation potential.

The conversion of the lodge from a visitor service-oriented facility to administrative and meeting room functions would contribute to the beneficial effect because the reception and dining functions of the lodge would be relocated to the new facility, where energy efficiency and conservation potential could be maximized. The benefits realized in the adapted lodge would be negligible to minor because energy and conservation-related upgrades would be retrofitted rather than installed as new.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternative C.

Conclusion

The construction of new lodging units would allow the use of the most innovative, energy efficient design and materials, resulting in a long-term minor beneficial effect to energy efficiency and conservation potential. Upgrades to the lodge would contribute to this beneficial effect, although constraints associated with retrofitting would lessen the benefit compared to the upgrades that would be incorporated in new construction of the lodging units. Winter use and the increased winter energy demands would diminish the intensity of this benefit, but still result in an overall minor beneficial impact on energy use and conservation potential. Cumulative effects would be negligible.

NATURAL LIGHTSCAPE (NIGHT SKY)

AFFECTED ENVIRONMENT

The natural lightscape was dominant throughout the night for the Ancestral Puebloans who inhabited the Mesa Verde area. The area's high elevation, with most of the mesa more than 7,000 feet above sea level, contributed to the clarity of the night sky. The mesa's inhabitants became keen observers of the night sky, and their knowledge of astronomy was often reflected in their building design and location.

Mesa Verde National Park's natural lightscape has changed little from its historic character. The park is several hundred miles from major metropolitan areas, and the nearest communities of Cortez and Mancos are about 10 and 8 miles from the park entrance, respectively, and 15 miles from the Administrative District on Chapin Mesa. As a result, the park receives little light pollution from outside sources.

The National Park Service has installed a limited amount of electrical lighting for safety and security in the Far View lodging complex. Lighting in the Far View lodging complex that would be affected by the proposed action includes the following.

External Lighting Associated with the Far View Lodging Complex

Artificial exterior lighting currently is used only during the primary visitor use season in the Far View lodging complex and is limited to porch lights on the lodging units. The lodge uses exterior lighting to illuminate access points and there are some substantial fugitive light emissions that occur when the lodge is in active use. The nearby Far View Terrace restaurant has 4-foot pedestal lights that were intended to be shielded but that produce noticeable fugitive light emissions.

External Lighting Associated with Traffic

Visitors arrive at the Far View lodging complex at all times of the day, including nighttime hours. Because of unfamiliarity with the area and the need to read signs, vehicle headlights are often used to assist wayfinding efforts. This can result in light pollution throughout the complex. The circulation pattern of the access roads and the parking locations require visiting motorists to drive throughout the lodging complex and inadvertently illuminate the units and various outdoor areas until they arrive at their destination and park their vehicles.

METHODOLOGY

Impacts on natural lightscapes (night skies) were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for natural lightscapes are as follows.

> *Negligible*: Natural lightscapes would not be affected, or effects would not be measurable. Any change in the nighttime lightscape would be slight, and would occur in a relatively small area.

Minor: Effects on natural lightscapes would be detectable, but would affect a small area. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.

Moderate: Effects on natural lightscapes would be readily apparent, and would occur over a relatively large area. Mitigation would probably be necessary to offset adverse effects and would likely be successful.

Major: Effects on natural lightscapes would be readily apparent, and would substantially change the lightscape characteristics or visibility of the night skies over a large area in and out of the park. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

The approach described in the "Impairment Analysis Method" section was used to determine whether impairment would occur to natural lightscapes, which are a resource that is considered necessary and appropriate to fulfill the purposes of Mesa Verde National Park. The following conditions would define impairment of natural lightscapes.

Impairment: A permanent adverse change would occur to the natural lightscape in a large portion of the park, affecting the resource to the point that the park's purpose could not be fulfilled and enjoyment by future generations of the natural lightscape would be precluded.

The geographic area that was evaluated for impacts on natural lightscapes included the viewshed within five miles south and east of the Far View lodging complex. This includes all roadways and parking areas. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Issues regarding the natural lightscape that were identified and addressed in the impact analysis included:

- External lighting, fugitive light emissions, and vehicle headlights could affect the ambient light within the Far View lodging complex;
- Views of Far View from surrounding areas within the park could be affected by changes in the ambient light in areas immediate to the Far View lodging complex; and
- Concerns that winter use would affect the natural lightscape during this previously unaffected season.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Effects on the natural lightscape from external lights associated with the lodging units and the lodge would not change from current conditions with the implementation of Alternative A.

The long-term, adverse effect at the Far View lodging complex would vary from negligible to minor, depending on the viewer's location. For example, persons wishing to experience the natural lightscape near the facilities may be hampered by the exterior lighting. However, this impact would be negligible to minor because it would be easy to move to a position where the view of the night sky would be relatively uninhibited.

The adverse effects of vehicle headlights on the natural lightscape would be negligible to minor, but short-term. The duration of the adverse impact would be limited to the time that it would take for a person's vision to readjust to the dark after exposure to vehicle headlights. Typically this duration would be in the range of several minutes or less per occurrence.

Cumulative Effects

Throughout the nation, the natural lightscapes in many areas have been adversely affected by artificial lighting, and the ability to observe night skies has been severely reduced. However, the long distance from Mesa Verde National Park to the concentrated light sources of major urban areas has preserved the park's natural lightscape.

Several proposed actions within or associated with the park could change the natural lightscape. These actions, and their probable effects, include the following.

- The proposed cultural center near the park entrance would include external lighting for security and safety. Directed lighting fixtures would be used to minimize fugitive light emissions. The lighting at this new facility would have a minor adverse effect on the visibility of the night sky locally, but would have a negligible adverse effect on the night sky in other parts of the park (NPS 2002b).

- The transportation plan could result in a reduction in the use of automobiles in Mesa Verde National Park, which would potentially reduce light emissions from headlights. This could have a minor beneficial effect in the first couple of hours after sunset. Further into the night, the effect probably would be negligible, as nighttime traffic typically diminishes to extremely low levels.

These plans could have local effects (within the lighted bounds of the specific site) on the natural lightscape. However, none would act cumulatively with Alternative A to change the overall natural lightscape in the park.

Conclusion

Alternative A would have a long-term, local, negligible to minor, adverse effect on the natural lightscape and the ability to observe night skies in and from the Far View lodging complex. Its effect outside of the complex would be negligible. There would be no cumulative effects.

Alternative A would not produce major adverse impacts on the natural lightscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS

planning documents. Consequently, there would be no impairment of the natural lightscape as a result of the implementation of Alternative A.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Alternative B would increase the number of external light fixtures in use during the primary visitor use season and introduce artificial lighting in the winter at the Far View lodging complex compared to Alternative A. Porch lights, walkway lighting, and directed overhead lights along roadways would be provided for the safety and security of visitors and staff.

The use of the latest innovations in lighting technology, including shielded downlighting and focused beam technology, would reduce fugitive light emissions and the total ambient artificial light level, even with an increase in the number of light fixtures. This would result in a negligible to minor, beneficial long-term effect on the natural lightscape in the Far View lodging complex during April to October.

The introduction of artificial exterior lighting and an increase in fugitive light emissions from windows during the winter months would represent a minor, adverse long-term effect because the additional light would hamper currently uninhibited viewing of the night sky from Far View lodging when compared to Alternative A. However, this adverse impact would be minimal in terms of the number of viewers affected because currently few persons view the night sky from the Far View lodging complex in the winter.

Compared to Alternative A, automobile traffic and associated headlight impacts would be approximately the same from April to October, but would markedly increase in the winter months under Alternative B. Because the roadways within the complex would still wind among the lodging units and the parking areas would be individually associated with the clustered units, the impact of vehicle headlights would continue to adversely affect the natural lightscape on a local scale. The adverse impact would be negligible because of the short duration of the impact from vehicle headlights. The added ambient winter light would represent a negligible, long-term adverse impact to the nighttime views of the Far View lodging complex from surrounding areas within the park. This potential adverse impact would be somewhat offset by some people's perception that lights in the distance at night are attractive, even though the light may inhibit unfettered viewing of the night sky.

Cumulative Effects

Cumulative effects would be similar to those described for Alternative A with the exception of introduction of lighting in the winter months. The lighting in the complex and vehicle lights would be localized at all times of year. The additional winter light would not act cumulatively with light from other plans or projects to affect the natural lightscape outside of the Far View lodging complex.

Conclusion

Alternative B would have a long-term, beneficial effect that would be negligible to minor during April to October as a result of upgrades to lighting fixtures and the use of new technology that would limit fugitive light emissions. It would have an adverse, minor, long-term effect on the Far View lodging complex natural lightscape with the introduction of artificial light in the winter months. There would be no cumulative effects.

Alternative B would not produce major adverse impacts on the natural lightscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural lightscape as a result of the implementation of the Alternative B.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

Alternative C would increase the number of exterior lighting units in the Far View lodging complex compared to Alternative A. The number of light fixtures needed for the safety and security of residents would increase slightly compared to Alternative B because of the greater number of individual units. However, because the use of innovative lighting technology would limit fugitive light emissions, the effects of Alternative C on the natural lightscape would be negligible, long-term, local and beneficial when compared to Alternative A.

Alternative C would introduce winter-season use of exterior lighting compared to Alternative A. As a result, the exterior lighting associated with Alternative C would have an adverse, minor, long-term effect on the wintertime natural lightscape of the Far View lodging complex.

The impacts from vehicle headlights would be similar to those described for Alternatives A and B, but with the parking areas primarily located around the perimeter of the complex, the impact would be reduced compared to those alternatives. Enhanced wayfinding in the complex would assist in directing visitors to their destinations during night hours, thus minimizing the use of headlights to assist in direction-finding. The adverse effect of vehicle lights would be negligible and short-term because of the relatively brief duration of the vehicle transit time through the complex.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B.

Conclusion

Impacts to the natural lightscape associated with Alternative C, namely negligible, long-term, local and beneficial effects, would be similar to those described for Alternative B at the Far View

lodging complex. The effects on the natural lightscape in wintertime would be adverse, minor, and long-term, and would be similar to the impacts of Alternative B. There would be no cumulative effects.

Alternative C would not produce major adverse impacts on the natural lightscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural lightscape as a result of the implementation of the Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Alternative D would decrease the number of individual exterior lighting units because of the consolidated design of the building and the use of innovative lighting technology would limit fugitive light emissions. However, this decrease in exterior ambient light would likely be offset with the potential for more concentrated fugitive light emissions from the larger building and greater concentration of lighted windows. Ultimately, the total ambient light would likely be about the same as that in Alternative A, although more concentrated around the lodging unit building. The long-term, local adverse effects of Alternative D on the natural lightscape would be negligible when compared to Alternative A because it would be necessary to move away from the concentrated sphere of light around the lodging building to view the night sky uninhibited by artificial light.

Alternative D would introduce winter-season exterior lighting and fugitive light emissions not present under Alternative A. As a result, the exterior lighting associated with Alternative D would have an adverse, minor, long-term effect on the wintertime natural lightscape within the Far View lodging complex and on the view of the mesa from within the park. The adverse impacts on the natural lightscape of Alternative D would be similar to Alternative C.

Light emissions from vehicle headlights would be similar to those described for Alternative C because the traffic pattern would be more compact with centralized parking. The adverse effect of vehicle headlights would be less than Alternative A because of the more centralized parking locations, but would remain local, short-term and negligible.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternatives B and C.

Conclusion

Alternative D would not likely have an effect on the natural lightscape different from Alternative A in the primary visitor use months (April to October) because the decrease in the number of exterior lighting units would be offset by fugitive light emissions from the concentration of

numerous windows in the lodging building. Wintertime effects would be adverse, minor, and long-term both within the complex and from distant views of the mesa. There would be no cumulative effects.

Alternative D would not produce major adverse impacts on the natural lightscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural lightscape as a result of the implementation of the Alternative D.

SOILS

AFFECTED ENVIRONMENT

The soils found in Mesa Verde National Park can be divided into four main categories (NPS 2002c).

- The basalt rockland complex is composed largely of rocky outcrops, cliffs, and steep talus slopes.
- The rough broken land complex is composed largely of infertile shallow soils, with some pockets of deeper, more fertile soil.
- The sandstone outcrop complex is composed of highly stratified sandy soils with low moisture-holding capacity. Some of the soils in this complex are deeper, well developed, and very fertile.
- The sandstone outcrop/stonyland complex is composed of moderately deep to deep soils developed in place on the mesa bedrock with loess deposits. This complex offers the largest area of arable soil and maintains topsoil textures that range from fine and very fine sandy loams to loams. Clay loam subsoils predominate with sandy clay loams interspersed.

The Far View lodging complex is situated primarily on Cliff House sandstone/red loess-derived soil, with characteristics similar to those described for the sandstone outcrop/stonyland complex . There are no prime or unique farmland soils associated with the project area.

METHODOLOGY

Impacts on soils were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for soils are as follows.

Negligible: Soils features would not be affected or effects would not be measurable. Any effects on soil productivity or fertility would be slight and would occur in a relatively small area.

Minor: Effects on soils would be detectable, but would affect a small area. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.

Moderate: Effects on soils would be readily apparent, and would occur over a relatively large area. Mitigation would probably be necessary to offset adverse effects and would likely be successful.

Major: Effects on soils would be readily apparent, and would substantially change the soil or geologic characteristics over a large area. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

The approach described in the "Impairment Analysis Method" section was used to determine whether impairment would occur to soils, which are resources that are considered necessary and appropriate to fulfill the purposes of Mesa Verde National Park. The following conditions would define impairment of soils.

> *Impairment:* A permanent adverse change would occur to soils in a large portion of the park, affecting the resource to the point that the park's purpose could not be fulfilled and enjoyment by future generations of the resources supported by soils would be precluded.

The geographic area that was evaluated for impacts on soils includes a 150-foot buffer around the entire Far View lodging complex and the Far View secondary wastewater treatment facility/ponds, including its access road. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Issues for soils that were identified and addressed in the impact analysis included:

- Soil removal and/or accelerated erosion as a result of construction, particularly in areas that already are experiencing erosion problems.

- Soil compaction, and associated creation of impermeable surfaces, from such actions as construction, informal, off-road parking and the use of unauthorized trails of convenience between facilities (social trails).

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would continue current patterns of soil disturbance around the Far View lodging complex. This disturbance would include compaction of soils along social trails. Effects would be limited to a relatively small area; no additional impermeable surfaces would be created. As such, impacts of Alternative A on soils would be considered negligible, adverse, long-term and local.

Cumulative Effects

Far View lodging complex is an established use area, and has been used for many years. The absence of additional disturbance by this alternative would limit the potential for contributing to regional soil perturbation. Consequently, there would only be an inconsequential incremental change in existing soil conditions resulting from the no action alternative, resulting in no cumulative effect on soils.

Conclusion

Alternative A would continue current use patterns and involve no new construction at the Far View lodging complex. As such this alternative would have only negligible, adverse, long-term

impacts to soils resulting from the continued compaction of soils along social trails and informal parking areas. Cumulative effects would be negligible.

Alternative A would not produce major adverse impacts on soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of soils as a result of the implementation of Alternative A.

IMPACTS OF ALTERNATIVE B - REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Rehabilitation of the Far View lodging complex would involve retrofitting the lodging units and lodge with minimal grading activity and ground disturbance in and around the area of existing structures. The soils disturbed by this alternative previously were modified during construction of existing park facilities. Considering mitigation measures, the effects of construction on soils at the lodging complex, compared to Alternative A, would be local, short-term, adverse, and negligible.

After rehabilitation efforts were complete, about 0.4 acres of soil would be made unavailable for other purposes because they would be newly covered by sidewalks and buildings. The new sidewalks would replace existing social trails, and the new sections of buildings would not substantially change the footprint of existing structures (refer to Figures 3 and 4 in the "Alternatives Considered" section). There would not be any loss of the use of soils other than those newly covered areas. Restoration of a parking lot along the north side of the lodging complex would offset this loss by reclaiming about 1.4 acres and converting it back to supporting native vegetation. There would not be a significant or measurable change in soil fertility or productivity and there would be a minor change in total impermeable surface area. As a result of Alternative B, there would be negligible effects related to converting previously undeveloped soils to other purposes.

All of the action alternatives (B, C and D) involve soil disturbance to varying degrees. To avoid adverse impacts to the extent possible, construction crews would follow best construction management techniques such as:

- Stockpiling and protecting topsoils,
- Installing silt fences, and
- Reseeding soils with native plant species prior to the first growing season after construction was completed, and protecting soils with straw or matting until a vegetative cover was established.

All of the action alternatives would involve the installation of a small package tertiary wastewater treatment plant in the footprint of the current plant (see Figure 2 for location).

Using the area occupied by the existing plant (including the evaporation ponds) would minimize the project area size and related soil disturbance, but soil compaction and/or accelerated erosion would still occur. The implementation of mitigation measures would control compaction and/or erosion to the extent possible resulting in negligible, adverse, short-term impacts to soils. No additional impermeable surface would be created at the wastewater treatment plant, and the productivity of the affected soils would return to baseline conditions following the installation of the plant.

Cumulative Effects

Actions taken under Alternative B would contribute to regional soil losses and/or perturbations accumulated by other plans and projects in the vicinity. The other projects with potential to affect soils include the housing replacement project at Far View, the Morefield Campground Rehabilitation and Site Plan, construction of a new cultural center, and a number of smaller park construction projects.

The housing project and campground rehabilitation would involve local, short-term soil alterations associated with removing trailers and constructing buildings at Far View and Morefield. The cultural center and other construction projects would contribute locally to soil loss as a result of an increase in impervious surfaces. Overall, these projects would have a negligible adverse impact on regional soil loss and a minor adverse impact on the local scale.

Understood in this context, Alternative B would contribute to regional soil losses, but with the use of conventional soil conservation and best management practices the incremental effect of this alternative would be inconsequential and the adverse cumulative effect would be negligible.

Conclusion

Because best management practices and mitigation measures would be used to minimize impacts to soil resources during and after construction, the short-term effects on soil would be local, adverse, and negligible. Cumulative effects would be negligible.

Alternative B would not produce major adverse impacts on soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of soils as a result of the implementation of the Alternative B.

IMPACTS OF ALTERNATIVE C - EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

Alternative C would impact soils during construction across most of the Far View lodging complex. New construction would be planned to minimize ground disturbance to retain the maximum amount of undisturbed soils and vegetative cover. The new units would not use the

existing structural footprints but would be confined to pre-determined zones. Much of the area was previously disturbed during construction of existing park facilities, and during normal park facility operations and maintenance. With the use of conventional soil conservation and best management practices, construction-related effects to soils would be short-term, minor, adverse and local.

Currently productive soil would be made unavailable for other purposes due to new coverage by expanded roads, parking lots, sidewalks and buildings. In some areas, areas where buildings or parking lots now exist would be available to re-establish native vegetation, restoring the productivity of the soils. New sidewalks would be planned and positioned to reduce social trailing. As a result, adverse impacts to soils under Alternative C, compared to Alternative A, would be long-term, local, and minor.

Cumulative Effects

Cumulative effects of Alternative C on soils would be similar in nature, but greater in extent, to those described for Alternative B.

Conclusion

Because best management practices would be used to minimize compaction and/or erosion during and after construction, the short- and long-term effects on soil would be local, adverse, and minor. Cumulative effects would be negligible.

Alternative C would not produce major adverse impacts on soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of soils as a result of the implementation of the Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

The demolition of existing lodging units and structures within the Far View lodging complex, and construction of a new consolidated structure would temporarily remove soils from production and promote short-term compaction and/or accelerated erosion. The majority of the area, if not the entire area, was previously disturbed during construction of the existing lodging complex, and during normal park facility operations and maintenance. Through the use of conventional soil conservation and best management practices, construction-related effects to soils would be negligible, short-term, adverse and local.

The change in layout presented in Alternative D would result in a greater total impervious area than Alternative A. However, this alternative would also result in larger continuous areas of productive soils and would minimize the need for social trailing because of the consolidation of

the lodge and lodging units. Alternative D would result in negligible, long-term, adverse, local impacts to soils.

Cumulative Effects

Cumulative effects of Alternative D on soils would be similar to those described for Alternatives B and C.

Conclusion

Because best management practices would be used to minimize adverse impacts during and after construction, the short- and long-term effects on soil would be local, adverse, and negligible. Cumulative effects would be negligible.

Alternative D would not produce major adverse impacts on soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of soils as a result of the implementation of the Alternative D.

NATURAL SOUNDSCAPE

AFFECTED ENVIRONMENT

No ambient sound monitoring was conducted specifically for this project. The natural soundscape can be defined as "…usually composed of both natural ambient sounds and a variety of human-made sounds" (NPS 2000a). Noise, an element that can degrade the natural soundscape, is defined as "…unwanted or undesired sound, often unpleasant in quality, intensity or repetition….In a national park setting, noise is a subset of human-made noises" (NPS 2000a). Noise may vary in character from day to night, and from season to season. Natural soundscape is created by natural processes including, but not limited to, sound created by physical and biological components such as wind, weather, birds, and insects.

The opportunity to experience the natural soundscape is an important part of a positive park experience for some visitors. Mesa Verde National Park provides a unique and rare setting due to its remote location and remarkable environmental makeup, which provides an ambience of natural quiet and solitude.

Some human-caused sound can be considered acceptable if it is inherently associated with purposes and uses for which the park was created. Director's Order #47, *Soundscape Preservation and Noise Management*, requires park units to determine the level of human-caused sound that is necessary for park purposes, and to achieve that level by reducing noise and restoring the natural soundscape to the greatest extent possible.

Sound can be perceived as noise because of loudness, frequency, duration, occurrence at unwanted times or from an unwanted source, or because it interrupts or interferes with a desired activity. A sound that is considered neutral or desirable by one person may be considered unpleasant noise by another person because of a perception of inappropriateness or disturbance. Noise can adversely affect park resources or values, including but not limited to natural soundscape, wildlife and visitor experience. It can directly impact them by modifying or intruding upon the natural soundscape, masking the natural sounds that are an intrinsic part of the environment.

The Far View lodging complex obviously has levels of human-caused sound associated with the development and use of the facilities. The complex is located in the Development Zone, as identified in the Mesa Verde National Park General Management Plan (NPS 1979). Because the complex provides services to visitors, noise levels greater than the natural ambient background level are considered acceptable within and adjacent to the complex. However, at certain times of the day or season, opportunities exist to experience solitude and quiet, and for noise levels to approach the natural ambient background level. The management focus of this zone is to maintain and protect historic resources, maintain visitor facilities, mitigate impacts from human use, and provide for a quality visitor experience. Evidence of management activity and resource preservation is expected to be visible and audible by park visitors and is an accepted activity within this zone.

The human-made sounds that are present in the park include vehicles, aircraft overflights, voices, and the sounds associated with the use, maintenance and operation of the buildings and

mechanical systems in the complex. Human-caused sound is typically higher between May and September, corresponding with high park visitation during these months.

METHODOLOGY

Impacts on the natural soundscape were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for the natural soundscape are as follows.

Negligible: Natural sounds predominate. Noise impacts are not audible in most of the lodging complex. Where noise is audible, it is for short duration with significantly lengthy periods of time that are noise-free.

Minor: Natural sounds usually predominate. Noise impacts are not audible in most of the lodging complex. Where noise is audible, impacts occur for short durations frequently during the day, and occasionally audible between sunset and sunrise.

Moderate: Natural sounds compete with human-caused sounds. Noise impacts are commonly audible in some areas of the lodging complex for up to half the daylight hours. In locations where noise is commonly audible, it occurs occasionally between sunset and sunrise. Noise is sometimes audible at places outside of the lodging complex.

Major: Natural sounds are dominated by human-caused sounds throughout the daytime hours. Natural sounds in the lodging complex are commonly impacted by noise during extended periods of time and frequently between sunset and sunrise. Noise is frequently audible at places outside of the lodging complex.

The approach described in the "Impairment Analysis Method" section was used to determine whether impairment would occur to the natural soundscape, which is a resource that is considered necessary and appropriate to fulfill the purposes of Mesa Verde National Park. The following conditions would define impairment of the natural soundscape.

Impairment: The natural soundscape would experience a major adverse impact. The natural soundscape would have no opportunity to be heard unimpaired as a result of noise generated by the rehabilitation or replacement of the Far View lodging complex facilities or the future use and operation of those facilities.

The geographic area that was evaluated for impacts to the natural soundscape includes the entire Far View lodging complex and the Far View secondary wastewater treatment facility/ponds, including its access road, where sound generated within the area could be heard. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Natural soundscape issues that were addressed in the impact analysis included:

- Noise associated with construction and rehabilitation/renovation activities would have an adverse impact on the natural soundscape that would be unacceptable even in the park's development zone.

- The addition of winter use would introduce undesirable noise to the winter natural ambient soundscape.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would continue the existing operation and maintenance of the Far View lodging complex. As a result, the natural soundscape would continue to experience impacts above natural ambient levels commensurate with human activity levels in the complex. These impacts are mitigated in the early morning and evening hours with the enforcement of "quiet hours" and this provides visitors with a glimpse of the natural soundscape that can be heard without human-caused noise. The continuing impacts to the natural soundscape would represent a negligible to minor, local, adverse impact. These adverse impacts would be short-term with respect to the duration of the noise (e.g., a vehicle entering or leaving the complex, a door slamming, a person speaking loudly), but also long-term because impacts could be expected to occur with regularity during the primary visitor use months.

Cumulative Effects

Two projects with potential to affect the natural soundscape include the replacement of housing in the Far View area and the Mesa Verde transportation planning effort currently in progress.

The Far View housing project would have a short-term adverse cumulative effect as a result of noise associated with construction and a long-term cumulative impact associated with regular use and maintenance of the housing units. These cumulative impacts would be negligible, with the construction impacts likely to be more intense. The housing units are adjacent to the Far View lodging complex, but under normal conditions, noise created at one site would not have a substantial compound impact on the natural soundscape because the distance between the two sites is sufficient to avoid a cumulative noise effect.

The transportation plan could have a beneficial cumulative impact on the natural soundscape because if private vehicle use was reduced, the total noise related to private vehicle use would be reduced, thus lessening the impact on the natural soundscape. This benefit would be long-term, local, and negligible because private vehicles would still be permitted to access the Far View lodging complex regardless of how the majority of visitors accessed the park.

Ultimately, Alternative A would not contribute to any incremental changes in existing soundscape conditions in combination with other plans and projects. Therefore, it would not contribute to any cumulative effects on the natural soundscape.

Conclusion

Alternative A would have a negligible, short-and long-term, local adverse impact on the natural soundscape at the Far View lodging complex in Mesa Verde National Park. There would be no cumulative effects.

Alternative A would not produce major adverse impacts on the natural soundscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural soundscape as a result of the implementation of Alternative A.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Alternative B would have an adverse impact on the natural soundscape as a result of noise associated with the construction activities associated with the rehabilitation of the lodge and lodging units in the Far View lodging complex. The impacts would be limited to normal, daytime working hours, and would be local, short-term, and negligible to moderate. There could be very short periods when construction equipment would produce noise of sufficient intensity that the adverse impact would be moderate, but these periods would be limited, and considering the nature of the developed zone, not entirely unexpected.

The introduction of activity to the Far View lodging complex in the winter months would affect the natural soundscape. Typically little or no human-caused noise has been generated within the complex in winter. The addition of winter use would introduce visitors and staff on a regular basis, and noise above ambient background levels would accompany this new use. The level of winter use would likely be less than in the peak primary visitor use and shoulder seasons, and the impact of the noise generated would be directly related to the level of use. The additional noise in winter would represent a negligible to minor, local, short-and long-term adverse impact to the natural ambient soundscape. The duration of new noise would likely be short-term, but the impact could be expected regularly, resulting in a long-term impact.

Cumulative Effects

Cumulative effects on the natural soundscape during the spring, summer, and fall seasons would be no different under Alternative B than under Alternative A. The only potential exception would occur during the actual construction work during construction for the rehabilitation of the complex. The Far View housing project is likely to be in an active construction phase in 2004 and would be concurrent with construction at the lodging complex. As a result, there could be a negligible cumulative adverse impact on the natural soundscape. The attenuation of noise over the distance and topography between the two sites would minimize this potential cumulative adverse effect.

The cumulative effects of rehabilitating the Far View lodging complex and operating it in the winter would have little to no cumulative impact on the natural soundscape. Winter natural ambient sound levels that are typically louder than during other seasons (e.g., strong winds and the lack of vegetative leaf cover to buffer sound) would be offset by the sound-muffling effects of snow and an absence of noisy weather events such as thunderstorms. Thus, the introduction of increased human-caused noise levels would potentially result in a cumulative increase in

impacts to the natural soundscape in conjunction with other plans and projects. However, the attenuation of sound over distance and the minimal activity associated with other projects in the winter would reduce and minimize this potential cumulative effect on the soundscape.

In general, there would be few if any projects other than regular operations and maintenance that would contribute to a cumulative effect on the natural soundscape during the winter.

Alternative B would contribute to cumulative adverse effects on the natural soundscape negligibly as a result of activities associated with rehabilitation of the lodging units that would occur concurrently with other construction activities, including the Far View housing project.

Conclusion

Alternative B would have a short- and long-term, local, negligible to moderate adverse effect on the natural soundscape as a result of noise or disturbance associated with rehabilitation of the lodging units. The duration of the higher intensity adverse impacts would be short and limited to daytime hours when impacts to the natural soundscape would be considered more acceptable. Winter use of the lodging complex would have short- and long-term, local, negligible adverse effects on the natural soundscape. Cumulative effects would be negligible.

Alternative B would not produce major adverse impacts on the natural soundscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural soundscape as a result of the implementation of Alternative B.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

Alternative C would have potential adverse effects on the natural soundscape similar to those associated with Alternative B, with a higher potential for longer periods of minor and moderate impacts during construction because of the need for demolition and grading over the entire lodging complex. However, these higher intensity impacts would remain short-term because the construction activities would only occur during normal daytime working hours and once the project was complete, the higher intensity impacts would cease. Impacts to the natural soundscape in the operations phase, regardless of season, would be the same as for Alternative B, namely, local, short-and long-term, negligible adverse impacts.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B.

Conclusion

Alternative C would have a short-and long-term, local, negligible to moderate adverse effect on the natural soundscape as a result of noise or disturbance associated with construction of the new lodging units. The duration of the higher intensity adverse impacts would be short and limited to daytime hours when impacts to the natural soundscape would be considered more acceptable. Winter use of the lodging complex would have short- and long-term, local, negligible adverse impacts on the natural soundscape. Cumulative effects would be negligible.

Alternative C would not produce major adverse impacts on the natural soundscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural soundscape as a result of implementation of Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Alternative D would affect the natural soundscape in the same way as Alternative C. The impacts would be the same as a result of demolition and construction of the new complex and from the introduction of winter use.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternatives B and C.

Conclusion

Alternative D would have short-and long-term, local, negligible to moderate adverse effects on the natural soundscape as a result of noise or disturbance associated with demolition and construction of the lodging units. The duration of the higher intensity adverse impacts would be short and limited to daytime hours when impacts to the natural soundscape would be considered more acceptable. Winter use of the lodging complex would have short- and long-term, local, negligible adverse impacts on the natural soundscape. Cumulative effects would be negligible.

Alternative D would not produce major adverse impacts on the natural soundscape whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the natural soundscape as a result of implementation of Alternative D.

VEGETATION

AFFECTED ENVIRONMENT

The vegetation of Mesa Verde National Park is similar to vegetation in other areas of the semi-arid plateau region of the southwestern United States. The species diversity of the park is enhanced by the transitional nature of the vegetation communities spanning the deserts to the south and west and the forested mountains to the north.

The two major community types in Mesa Verde National Park are pinyon-juniper dominated by pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), and mountain shrub chaparral, which is dominated by Gambel oak *(Quercus gambelii)* and Utah serviceberry *(Amelanchier utahensis)*. Each of these community types comprise almost half of the park's vegetation.

Other important community types occupy smaller portions of the park. They include:

- Douglas-fir (*Pseudotsuga menziesii*)/ponderosa pine (*Pinus ponderosa*) woodlands;
- Grassland communities with western wheatgrass (*Pascopyrum smithii*), blue grama (*Bouteloua gracilis*), needle-and-thread grass (*Stipa comata*), and muttongrass (*Poa fendleriana*);
- Upland sagebrush (*Artemisia tridentata*) communities; and
- Riparian/wetland communities dominated by cottonwood (*Populus* spp.) and willow (*Salix* spp.).

There are numerous variations and intergradations of all these vegetation communities.

Mesa Verde National Park is somewhat unique in the region because grazing has been excluded from within the park boundaries for over 60 years (NPS 2002c). As a result, the mix of species in the park has been changing from plants that are selectively favored by grazing to more natural plant assemblages.

The park supports several endemic plant species found nowhere else and many ancient trees, some more than 1,000 years old. Some of the best examples of intact mature pinyon-juniper forests in the world occur within the park. Virtually the entire world population of Schmoll milkvetch (*Astragalus schmolliae*) is located on Chapin Mesa in the pinyon-juniper community. However, none of the plant species within the park are federally listed as endangered or threatened.

Typical native plants found in the vicinity of the Far View lodging complex are presented in Table 6.

TABLE 6. COMMON PLANT SPECIES IN FAR VIEW AREA

Common Name	Scientific Name	Common Name	Scientific Name
Utah serviceberry	*Amelanchier utahensis*	Sulfur flower	*Eriogonum umbellatum*
Gambel oak	*Quercus gambelii*	Tailcup lupine	*Lupinus caudatus*
Snowberry	*Symphoricarpos albus*	Rocky Mountain milkvetch	*Astragalus scopulorum*
Rock fendlerbush	*Fendlera rupicola*	Sego lily	*Calochortus gunnisonii*
June grass	*Koeleria cristata*	Arrowleaf balsamroot	*Balsamorhiza sagittata*
Needle-and-thread grass	*Stipa comata*	Utah fleabane	*Erigeron utahensis*
Squirreltail bottlebrush	*Sitanion hystrix*	Showy fleabane	*Erigeron speciosa*
Muttongrass	*Poa fendleriana*	Brittle cactus	*Opuntia fragilis*

Much of the vegetation in the Far View area has been altered by the construction of existing facilities and many years of human activity and management actions. These activities and actions have included site grading and excavation, trampling, trimming, mowing, and the introduction of non-native species.

In addition to native vegetation, the park has become infested with many non-native plant species. Many of these species are invasive and pose a threat to the integrity of the park's plant communities. The invasive plants often extend their range and growth densities in disturbed ground where competition from native species has been removed or reduced. Canada thistle (*Cirsium arvense*), smooth brome (*Bromus inermis*), musk thistle (*Carduus nutans*), houndstongue (*Cynoglossum officinale*), and Russian knapweed (*Acroptilon repens*) are among the non-native plants that grow in the Far View area. The weed problem at Far View is extensive with several chronically troubled areas.

Weed control in the park is an important part of maintaining healthy biotic communities. Control methods include mechanical removal, application of selective herbicides, the release of biological control insects, and replanting disturbed areas with native species. Weed control in the Far View area takes place currently on an intermittent basis.

When the vegetative cover is disturbed or removed, revegetation with native species can take several years. This occurs because of the short growing season and meager rainfall in the park, and is aggravated by the thin soils that occur in many areas. Mitigation measures such as straw mulch, surface water controls (e.g., diversions), and silt fences can help protect the soil until a vegetative cover is sufficiently established, while control of invasive non-native plants can reduce competition. Supplemental irrigation is one of the most effective methods for improving revegetation, but is seldom available.

The evaporation lagoons at the existing Far View secondary wastewater treatment facility sometimes run over capacity. Occasionally, during high use periods, as much as 30,000 to 40,000 gallons of treated wastewater are being discharged into Little Soda Canyon every day. These discharges represent artificial irrigation and have directly resulted in changes to down-canyon vegetation. For example, there are now stands of cattails growing in what naturally would be dry upland drainage bottoms. Additionally, Canada thistle, a non-native noxious weed, has become well established in the drainage. (San Miguel pers. comm. 2003).

METHODOLOGY

Impacts on vegetation were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for vegetation are as follows.

Negligible: Individual native plants may occasionally be affected, but measurable or perceptible changes in plant community size, integrity, or continuity would not occur.

Minor: Effects on native plants would be measurable or perceptible, but would affect a small area. The viability of the plant community would not be affected and the community, if left alone, would recover.

Moderate: A change would occur over a relatively large area in the native plant community that would be readily measurable in terms of abundance, distribution, quantity, or quality. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.

Major: Effects on native plant communities would be readily apparent, and would substantially change vegetation community types over a large area in and out of the park. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

The approach described in the "Impairment Analysis Method" section was used to determine whether impairment would occur to vegetation, a resource considered necessary and appropriate to fulfill the purposes of Mesa Verde National Park. The following conditions would define impairment of vegetation.

Impairment: A permanent change in native plant communities would occur in a large portion of the park. The change would be highly noticeable, could not be mitigated, and would affect vegetation to the point that the park's purpose could not be fulfilled and enjoyment of the vegetation resource by future generations would be precluded.

The geographic area that was evaluated for impacts on vegetation includes a 150-foot buffer around the entire Far View lodging complex, the Far View secondary wastewater treatment facility/ponds, including its access road, and the riparian corridor downstream from the wastewater treatment facility. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Vegetation issues that were identified during public scoping and addressed in the impact analysis included:

- Disturbance of new areas that currently are supporting native plant assemblages and communities.
- Potential difficulties in re-establishing a native plant community in disturbed areas.
- Effects on the spread of non-native invasive species.
- Effects on vegetation from trampling, flower picking, and soil compaction.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would not include any new land disturbance. Alternative A would continue current patterns of vegetation disturbance around the Far View lodging complex, including trampling of vegetation along social trails. Other activities such as routine maintenance, utilities excavation, fuel reduction by mechanical and prescribed fire techniques, and trimming also would continue as they have in the past. Alternative A would result in minor, adverse, long-term, local effects on vegetation at the Far View lodging complex.

Continuation of current management would continue occasional discharges of treated water to Little Soda Canyon during periods of high use. These discharges would support the growth of vegetation not normally expected in this arid drainage. The limited area affected by the vegetation change and the unlikelihood that these changes would threaten the viability of the surrounding native plant community characterize this impact to vegetation as minor, long-term, adverse and local.

Cumulative Effects

Far View lodging complex, in the park's development zone, has been established in the park for many years. The absence of additional disturbance by Alternative A would limit the potential for contributing to cumulative regional losses of vegetation. Consequently there would only be a negligible change and cumulative impact to existing vegetation conditions resulting from Alternative A.

Conclusion

Alternative A would have few changes on native vegetation conditions at the Far View lodging complex. The effects on vegetation that would result from trampling along social trails and maintaining existing facilities at the lodging complex would continue to be minor, adverse, long-term, and local. Cumulative impacts to vegetation would be negligible.

Alternative A would not produce major adverse impacts on vegetation whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of vegetation as a result of implementation of Alternative A.

IMPACTS OF ALTERNATIVE B - REHABILITATE THE LODGE AND LODGING UNITS

All action alternatives (B, C, and D) involve the disturbance of vegetation to varying extents. The analysis of impacts takes into account the offset and minimization of potential adverse effects

that result from the implementation of mitigation measures and best management practices. Construction crews would employ measures and practices such as:

- Washing equipment so that it is free of mud and weed seeds prior to bringing it into the park,
- Delineating construction boundaries with fencing,
- Establishing parking and storage areas,
- Penalizing contractors who disturb vegetation outside the defined boundaries,
- Installing silt fences,
- Planting native trees and shrubs, and maintaining landscaping,
- Reseeding soils with native plant species prior to the first growing season after construction is completed,
- Weed control, and
- Protecting soils with straw or matting until a vegetative cover is established.

Analysis

Rehabilitation of the Far View lodging complex would require minimal changes in site grading. The changes would include removal of some trees, shrubs, and herbaceous cover in and around the structures. Vegetation in these areas was previously disturbed by the construction, occupation, and management of existing facilities. Rehabilitation would include newly designed walkways to minimize the likelihood of social trailing and the associated trampling of vegetation. Newly graded or otherwise bare soils would be seeded with native species prior to the following growing season and protected with straw or matting until a vegetative cover was established.

Compared to Alternative A, Alternative B's construction-related activities would cause local, long-term, adverse effects on vegetation. However, considering mitigating measures and the small areas involved, the effects of rehabilitation on vegetation at Far View lodging complex would be negligible to minor in intensity.

No areas of pinyon-juniper forest or special-concern species would be affected by Alternative B.

Alternative B would include the installation of a new tertiary wastewater treatment facility. Construction of the new treatment system would take place entirely in the existing system's footprint. The system would be adequate to handle current and future demand and capable of winter operation.

Utilization of the current secondary wastewater treatment facility's footprint would reduce the site disturbance, but displacement and/or trampling of individual plants on the site perimeter would still occur. Using the mitigation measures and best management practices described above, these impacts would be controlled to the extent possible and measurable changes in

vegetative community size, integrity, or continuity would not occur. Impacts to vegetation would be negligible, adverse, long-term and local.

Only about 0.4 acre within the complex would be unavailable for revegetation because of building expansions or sidewalks. This would be partially offset by the revegetation of an existing parking lot that would be taken out of use.

Native species would be used for all landscaping and revegetation, although revegetated areas would likely have lower densities and less diverse species composition than native plant communities. To protect against invasive non-native plants, the park would be responsible for maintaining a long-term weed monitoring and control effort. As a result, there would be local, long-term minor adverse effects to vegetation.

Cumulative Effects

The only projects with the potential to have an impact on vegetation in the same general area are the Far View housing project and fire management plan.

Vegetation would be removed by the construction of permanent housing, associated sidewalks and parking areas at Far View and Morefield. Its removal would have a negligible effect on the native vegetation of the park or the region.

The latest fire management plan, currently in preparation, would likely affect vegetation at and near the Far View lodging complex as a result of fuels management efforts, including mechanical thinning and prescriptive burning. This impact would combine with the proposed action to have a minor, local, long-term adverse impact on the vegetative community.

Use of conventional vegetation conservation and best management practices would ensure that Alternative B would result in only negligible, long-term, adverse, local, incremental impacts to regional vegetation losses and/or changes in community, resulting in negligible cumulative impacts.

Conclusion

Alternative B's effects on vegetation would be minor, long-term, adverse, and local. These impacts would be associated with displacement and/or trampling of individual plants during construction activities. Cumulative impacts to vegetation would be negligible.

Alternative B would not produce major adverse impacts on vegetation whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of vegetation as a result of the implementation of Alternative B.

IMPACTS OF ALTERNATIVE C - EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

This alternative would extensively and permanently displace native vegetation during construction operations. New construction would be planned to minimize ground disturbance to retain the maximum amount of native vegetation. The effects of construction on vegetation at the Far View lodging complex, compared to Alternative A and taking mitigation measures into account, would be long-term, adverse, minor and local. Native species would be used for all landscaping and revegetation, but the resulting low density and less diverse species composition after construction would persist indefinitely.

No areas of pinyon-juniper forest or special-concern species would be affected by Alternative C.

Installation and operation of the new tertiary wastewater treatment plant would have the same impacts as described for Alternative B.

Cumulative Effects

Cumulative effects of Alternative C on vegetation would be similar to those described for Alternative B.

Conclusion

Using conventional vegetation conservation methods and mitigation measures, some effects on vegetation would be associated with displacement and/or trampling of individual plants during construction activities and would be minor, adverse, and local. In the long term, vegetation would experience minor, adverse, local impacts. Cumulative impacts to vegetation would be negligible.

Alternative C would not produce major adverse impacts on vegetation whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of vegetation as a result of the implementation of Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Alternative D would have similar long-term, minor, adverse, local construction-related effects to vegetation as Alternative C.

The long-term effects of Alternative D would be similar to Alternative C. The intensity of the impact would be slightly less under Alternative D because the consolidated nature of the lodging would remove much of the potential for social trailing and the contiguous area available for reestablishment of a native plant community would be larger.

No areas of pinyon-juniper forest or special-concern species would be affected by Alternative D.

Installation and operation of the new tertiary wastewater treatment plant would have the same impacts as described for Alternative B.

Cumulative Effects

Cumulative effects of Alternative D on vegetation would be similar to those described for Alternative B.

Conclusion

Alternative D would result in long-term, adverse, minor, local impacts as a result of displacing and damaging vegetation during construction operations. Cumulative impacts to vegetation would be negligible.

Alternative D would not produce major adverse impacts on vegetation whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of vegetation as a result of the implementation of Alternative D.

WATER RESOURCES

AFFECTED ENVIRONMENT

The climate of Mesa Verde National Park is semi-arid. Summer daytime temperatures range from 85 to 100 degrees, and winter temperatures often reach into the 50s. The park receives 18 inches of precipitation annually with thunderstorms common in the summer, and 6 feet of snow falling each winter.

The park lies within the Mancos River watershed, which is in turn part of the larger San Juan River basin (EPA 2003). The majority of drainages in this environment are ephemeral, conveying spring snowmelt and stormwater to the few perennial streams. Soils in the area are subject to sheet erosion from overland flows, a common occurrence in relatively sparsely vegetated landscapes.

The Far View lodging complex is located on a ridge dividing two ephemeral drainages that carry flows in a generally southerly direction toward the Mancos River. Approximately two-thirds of the complex drains to the east, into Little Soda Canyon. This drainage is also the location of the existing secondary wastewater treatment plant, and would be the site of the new tertiary wastewater treatment plant (NPS 2002a).

Wastewater generated by the Far View lodging complex is currently treated in an evaporative lagoon system, located in the Little Soda Canyon drainage. To reduce algal growth and allow for proper wastewater processing, the lagoons are treated with Aquashade®, a dye and EPA registered algaecide. Over the past several years, increased visitation and greater wastewater flows generated by the lodging complex has resulted in the ponds discharging treated effluent into Little Soda Canyon. Discharges of 30,000 to 40,000 gallons per day have occasionally occurred over the past several summers. Evidence of environmental exposure to Aquashade® (blue staining on rocks and vegetation) has extended 2 miles downstream of the lagoons (NPS 2002a).

Stormwater and snowmelt runoff is generated from the 7.5 acres of existing parking lots, roads, building footprints, and other impervious surfaces in the lodging complex. Runoff from the majority of the site is directed through a culvert near the lodge and flows to Little Soda Canyon. There are currently no stormwater control measures present in the drainage, and some erosion is evident at the site, especially at the higher elevations near the lodge parking area.

In addition to causing erosion, uncontrolled runoff can flush pollutants from parking areas and roadways into local drainages. Although the quality of stormwater runoff from the Far View lodging complex has not been tested, such runoff commonly includes hydrocarbons (components of gasoline and oil), nitrogen, and several heavy metals (e.g., lead, nickel, and cadmium from brake pads) (Novotny and Olem 1994).

The water supply for the Far View lodging complex is supplied by the park's water treatment plant, west of the park entrance road near U.S. Highway 160. The water originates in the LaPlata Mountains, northeast of the park. The park's water supply is conveyed from a raw water intake, via pipeline, 16 miles to the water treatment plant. The park currently consumes about 80 acre-

feet (approximately 26 million gallons) of water annually (NPS 2002b). Mesa Verde National Park owns water rights to 120 acre-feet per year and has a reserved water right for an additional 100 acre-feet per year. This supply is considered to be more than adequate to meet the current and anticipated future demands of park facilities and development.

METHODOLOGY

Impacts on water resources were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for water resources are as follows.

- *Negligible*: Water resources (quality and quantity of flows) would not be affected, or effects would not be measurable.
- *Minor*: Effects on water resources would be detectable, but would affect a small area. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.
- *Moderate*: Effects on water resources would be readily apparent, and would occur over a relatively large area, or the park would potentially be in violation of federal and state wastewater management regulations. Mitigation would probably be necessary to offset adverse effects and would likely be successful.
- *Major*: Effects on water resources would be readily apparent, and would substantially change the quality or quantity of flows over a large area in and out of the park, the park would be in violation of federal or state wastewater management regulations and would be subject to regulatory intervention. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

The approach described in the "Impairment Analysis Method" section was used to determine whether impairment would occur to water resources. The following conditions would define impairment of the park's water resources:

- *Impairment*: A permanent adverse change would occur to water resources in a large portion of the park, affecting the resource to the point that the park's purpose could not be fulfilled and enjoyment by future generations of the water resources of the park would be precluded.

The area that was evaluated for impacts on water resources includes the Far View lodging complex and its adjacent drainages, including the area containing the Far View secondary wastewater treatment facility. Water use considered in this assessment is based on lodging availability for 150 guests. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Issues for water resources identified and addressed in this analysis include:

- The existing secondary wastewater treatment facility needs to be upgraded to meet current and future needs.

- Changes in stormwater runoff from impervious surfaces could adversely affect water quality of local surface waters.

- Changes in water use may increase wastewater discharge.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Under Alternative A, the existing lagoon wastewater system would continue to be used to secondarily treat wastewater generated at the Far View lodging complex. Demand on the treatment system is high during the primary visitor use season, and treated effluent containing an algaecide (Aquashade®) has been released into Little Soda Canyon daily during peak visitation periods. Although effluent meets water quality standards, it does contain remnant dye from the Aquashade® treatment. The dye affects the appearance of the water and has stained rocks and vegetation in the drainage. The growth of algae has more recently been addressed, with a measure of success, by using barley straw to chemically limit algae growth in the lagoons. Additionally, the quantity of water discharged to Little Soda Canyon exceeds what would normally flow in this drainage and the added flow supports the growth of vegetation that would not normally occur. Continuing current management of the existing wastewater system would perpetuate moderate, long-term, adverse effects to local water resources.

Under Alternative A, stormwater drainage patterns and resulting erosion in and adjacent to the Far View lodging complex would continue unchanged. The erosion adjacent to the lodge would continue to convey stormwater and meltwater from the majority of the 7.5 acres of impervious area within the complex. The sediment generated by erosive processes, in addition to the hydrocarbons and other pollutants from the parking lots and roads, would be delivered into the environment in an uncontrolled manner. This would result in long-term, negligible to minor adverse effects to local water resources.

Alternative A would not generate appreciable changes in potable water use at the Far View lodging complex. Therefore, this alternative would not change the volume of wastewater generated within the park, or add to demands on the secondary wastewater treatment facility.

Cumulative Effects

The park is undertaking a variety of construction projects that could affect water resources. The transportation plan, construction of the new cultural center, Morefield Campground rehabilitation, and Wetherill Mesa redevelopment plan will all generate soil disturbance that could increase the potential for sediment to be delivered into nearby drainages. Over the short-term, these actions could have a cumulative adverse effect on the quality of local surface waters, at a negligible to minor level.

The park is planning to extend an existing waterline from Far View to Chapin Mesa. A second waterline is also planned to support fire hydrant installations. Both of these projects could

increase the park's water usage in the long-term, although the increase would be at a negligible level, and would not affect water depletions.

Alternative A would make a negligible contribution to cumulative, long-term, negligible to minor adverse effects on water resources.

Conclusion

Alternative A would continue to generate long-term, local, moderate adverse effects resulting from treated effluent and algaecide discharges. In addition, adverse effects caused by uncontrolled stormwater runoff would be negligible to minor, long-term and local. This alternative would be unlikely to have any effect on water usage or generation of wastewater flows. Cumulative effects would be long-term and negligible to minor.

Alternative A would not produce major adverse impacts on water resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of water resources as a result of implementation of Alternative A.

WATER RESOURCE COMPONENTS COMMON TO ALL ACTION ALTERNATIVES

Alternatives B, C, and D include several common components:

- Installation of a new tertiary wastewater treatment plant that would reduce the discharge of treated effluent into Little Soda Canyon. Discharges from the new plant would meet water quality standards. No Aquashade® would be used or necessary.

- Lodging facility operations could change from seasonal to year-round. This change could increase the potable water demand within the park, and could increase wastewater flows delivered to the wastewater treatment facility.

Actions that would be taken to manage potential reductions in water quality resulting from temporary construction activities, as well as those generated by the long-term presence of impervious surfaces, include:

- Installation of silt fencing, revegetating disturbed areas, and protecting barren soil from rain splash and wind erosion to limit sediment delivery to drainages during construction and site reclamation activities.

- Revegetating eroded drainages to slow flow velocity, reducing erosion and sediment delivery downstream.

- Construct energy dissipating devices or structures to reduce the erosive capacity of the flows.

- Parking areas and sidewalks with porous (pervious) material sections to allow water to enter the underlying soils to reduce the quantity of stormwater generated.

- Reduction of hydrocarbon content by including a vault separator that slows the flow, allowing hydrocarbons to rise and be captured for disposal.

IMPACTS OF ALTERNATIVE B - REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Under Alternative B, as well as the other action alternatives, replacement of the existing wastewater lagoons with a new tertiary wastewater treatment plant would provide beneficial effects. The plant would be properly sized to accommodate current and future wastewater flows, and would be fully compliant with federal and state wastewater regulations. The volume and content of effluent discharged into Little Soda Canyon would be permitted and monitored under Colorado Department of Health and Environment criteria. Eliminating the discharges of effluent containing algaecide and bringing the site into full regulatory compliance would result in long-term, local, moderate beneficial effects.

Alternative B would reduce the total impervious area of the Far View lodging complex from 7.5 acres to approximately 6.8 acres. This reduction would generate a reduced amount of stormwater runoff, but the reduction would not likely be noticeable. However, this alternative provides the opportunity for installation of stormwater management measures to control runoff from the site. By implementing any variety of the control measures listed above, the quality of stormwater released into local drainages would improve. These stormwater management actions would generate long-term, negligible benefits to local water resources.

Under Alternative B, as well as the other action alternatives, the Far View lodging complex could require an increase in potable water to supply year-round visitation if the opportunity for year-round use was realized. The park now uses 80 acre-feet of the 120 acre-feet of water available under its current water right. It is unlikely that increased overnight stays at Far View would generate the need for the park to utilize any of its additional 40 -acre feet of current rights. It is anticipated that this alternative would not result in a perceptible change in the park's overall water usage as a result of offsets associated with the installation of new water-saving appliances (i.e., low-flow toilets and showerheads). There would be no effects on water rights or the park's contribution to water depletions in the San Juan River basin.

Construction activities to rehabilitate the existing lodging complex would disturb soils and increase the potential for runoff to carry sediment. Adverse effects would be limited with the use of best management practices, and would be short-term, local, and negligible to minor.

Cumulative Effects

The other projects and plans that would affect water resources within the park are discussed for cumulative effects of Alternative A.

Over the long-term, Alternative B would contribute beneficially to cumulative effects on water resources by eliminating effluent discharges into Little Soda Canyon and improving stormwater management. In concert with other plans, the long-term cumulative environmental benefits would be moderate.

The increase in demand made on the park's potable water system would contribute adversely to overall water consumption at the park, although the use of water-saving appliances such as low flow toilets and showerheads would minimize or possibly totally offset the increase in consumptive water use. This alternative, in concert with demands made by the projects to provide water to Chapin Mesa and installation of fire hydrants, would contribute to increased water demand at a negligible level.

Conclusion

Alternative B would result in long-term, local, moderate beneficial effects to water resources by eliminating wastewater discharges into Little Soda Canyon. Long-term negligible to minor benefits would be achieved with stormwater management actions within the project area. Long-term negligible adverse effects on potable water demand would likely be offset by water-saving appliances.

The short-term adverse effects of Alternative B would result from construction disturbance. Best management practices and mitigation measures would limit the local effects on water quality to negligible to minor. Cumulative effects on water resources would primarily be moderately beneficial.

Alternative B would not produce major adverse impacts on water resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of water resources as a result of the implementation of Alternative B.

IMPACTS OF ALTERNATIVE C - EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

The effects of installing the new tertiary wastewater treatment system on water resources would be similar to those described for Alternative B, namely, long-term, local, beneficial and moderate.

Alternative C would provide a minimal reduction in the total impervious area of the Far View lodging from complex (from 7.5 to 7.4 acres). This reduction would not generate a noticeable reduction in the quantity of stormwater runoff. However, as with Alternative B, this alternative provides the opportunity for stormwater management actions. By implementing mitigation measures, stormwater quality could be improved. These improvements would generate long-term, local, negligible benefits to local water resources.

Under Alternative C, the increased demand made on the park's water supply would be the same as that discussed for Alternative B.

Alternative C construction activities to rehabilitate the lodge and construct new individual lodging units would disturb soils and increase the potential for runoff to carry sediment. Adverse effects would be limited by use of best management practices and mitigation measures, and would be short-term, local and negligible to minor.

Cumulative Effects

The effects to water resources of Alternative C, in concert with other projects and plans, would be the same as those discussed for Alternative B.

Conclusion

Alternative C would result in long-term moderate beneficial effects to water resources by eliminating effluent discharges into Little Soda Canyon. Long-term, local, negligible to minor benefits would accrue as a result of improved stormwater management measures within the project area. Long-term negligible adverse effects on potable water demand would result from year-round operation of the lodge if the opportunity for year-round use was realized.

The short-term effects of Alternative C would result from construction disturbance. Best management practices would limit the local adverse effects to negligible to minor. Cumulative effects on water resources would primarily be moderately beneficial.

Alternative C would not produce major adverse impacts on water resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of water resources as a result of the implementation of Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Installing a new tertiary wastewater treatment facility and eliminating discharges of excess treated effluent and algaecide would produce long-term, local, moderate benefits to water resources.

Alternative D would have effects on water resources similar to Alternative C. Implementation of long-term mitigation measures would improve the quality of stormwater discharged from the site, resulting in long-term, negligible to minor benefits to local water resources.

Under Alternative D, the increased demand made on the park's water supply would be the same as that discussed for Alternatives B and C.

Construction and site grading over a large portion of the site would disturb soils and increase the potential for sediment-laden runoff. Overall, implementation of this alternative would have short-term, local, minor, adverse effects on water quality. Effects would be minimized by mitigation measures taken to control erosion during project activities.

Cumulative Effects

The effects of Alternative D on water resources, in concert with other projects and plans, would be the same as those discussed for Alternatives B and C.

Conclusion

Alternative D would produce long-term, local, moderate benefits by eliminating treated effluent and algaecide discharges into Little Soda Canyon. Improved stormwater management would result in long-term negligible to minor benefits. Long-term, negligible adverse effects on the demand for domestic water would result from an increase in annual visitors.

The short-term adverse effects associated with Alternative D would result from demolition, construction, and reclamation activities. Best management practices and mitigation measures would limit the local adverse effects to minor. Cumulative effects on water resources would primarily be moderately beneficial.

Alternative D would not produce major adverse impacts on water resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of water resources as a result of the implementation of Alternative D.

WILDLIFE AND HABITATS

AFFECTED ENVIRONMENT

The wildlife of Mesa Verde National Park is similar to wildlife in other semi-arid plateau regions of the southwestern United States. Typical native wildlife species found in and near the Far View lodging complex are listed in Table 7. Several generalist species inhabit all or most of the vegetation types in the park while more specialized species may be characteristic of a particular habitat.

The species diversity of the park is enhanced by the transitional nature of the communities spanning the deserts to the south and west and the forested mountains to the north. Wildlife migration corridors connect the park with other important wildlife habitat on adjoining lands.

The wildlife habitats around the Far View lodging complex already have been altered by many years of human activity and management actions. These activities have resulted in the disturbance of native vegetation and the introduction of non-native species. Wildfire, along with prescribed burning and thinning of trees and shrubs to reduce risks to people and property from wildfire, also has altered wildlife habitats.

The presence of humans and their pets (repellants), trash (an attractant), and the fragmentation of habitat, alters wildlife behavior and species diversity. Another factor affecting wildlife in parts of the park are non-native animals, which can pose a threat to the park's wildlife habitat because of grazing, browsing, or trampling. Trespass horses are found in the Far View area and cause the most impact on wildlife habitats. Capture and return of these horses to their owners would continue under all alternatives.

TABLE 7. COMMON ANIMAL SPECIES IN THE FAR VIEW LODGING COMPLEX AREA

Common Name	Scientific Name	Common Name	Scientific Name
Deer mouse	*Peromyscus maniculatus*	Warbling vireo	*Vireo gilvus*
Western pipistrelle bat	*Pipestrellus hesperus*	Virginia's warbler	*Vermivora virginiae*
Pocket gopher	*Thomomys bottae*	Spotted towhee	*Pipilo maculatus*
Least chipmunk	*Eutamias minimus*	Black-headed grosbeak	*Pheucticus melanocephalus*
Coyote	*Canis latrans*	Western rattlesnake	*Crotalus viridis*
Mountain lion	*Felis concolor*	Smooth green snake	*Liochlorophis vernalis*
Bobcat	*Lynx rufus*	Short-horned lizard	*Phrynosoma douglassii*
Mule deer	*Odocoileus hemionus*	Colorado hairstreak butterfly	*Hypaurotis crysalus*
Horse (trespass livestock)	*Equus caballus*	Blue butterfly	*Leptotes* sp.
Red-tailed hawk	*Buteo jamaicensis*	Stick-nest ants	*Formica* sp.
American kestrel	*Falco sparverius*	Yellowjacket wasp	Vespidae
Wild turkey	*Meleagris gallopavo*	Desert skunk beetle	*Eleodes armata*
Western scrub-jay	*Aphelocoma californica*	Glowworm	Lampyridae
Blue-gray gnatcatcher	*Polioptila caerulea*	Sexton beetle	Sylphidae

METHODOLOGY

Impacts on wildlife and habitats were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for wildlife and habitats are as follows.

Negligible: Individual animals may occasionally be affected, but measurable or perceptible changes in the size, integrity, or continuity of wildlife populations would not occur.

Minor: Effects on wildlife and habitats would be measurable or perceptible, but would affect a small area. While the mortality of individual animals might occur, the viability of wildlife populations would not be affected and the community, if left alone, would recover.

Moderate: A change to wildlife and habitats would occur over a relatively large area. The change would be readily measurable in terms of abundance, distribution, quantity, or quality of populations. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.

Major: Effects on wildlife and habitats would be readily apparent, and would substantially change wildlife populations over a large area in and out of the park. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

The approach described in the "Impairment Analysis Method" section was used to determine whether impairment would occur to wildlife and habitats, which are resources that are considered necessary and appropriate to fulfill the purposes of Mesa Verde National Park. The following conditions would define impairment of wildlife and habitats.

Impairment: A permanent adverse change in wildlife and habitats would occur in a large portion of the park. The change would be highly noticeable, could not be mitigated, and would affect wildlife and habitats to the point that the park's purpose could not be fulfilled and enjoyment of the wildlife and habitat resource by future generations would be precluded.

The geographic area that was evaluated for impacts on wildlife and habitats includes a 150-foot buffer around the entire Far View lodging complex and the Far View secondary wastewater treatment facility/ponds, including its access road. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Wildlife and habitats issues that were addressed in the impact analysis included:

- Conversion of wildlife habitat to other uses.
- Changes in the quality of wildlife habitat that could affect wildlife diversity, abundance, or distribution.
- The introduction of use during the winter months, when the complex has typically been uninhabited.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would not include any new land disturbance and would continue the current pattern of human interactions with, and impacts to, wildlife and wildlife habitat. Therefore, this alternative would not affect existing wildlife populations or habitat conditions in the Far View lodging complex. There would be no changes in existing wildlife populations or their supporting habitats.

Cumulative Effects

Two projects with potential to affect wildlife or habitats include the replacement of housing in the Far View area and the Mesa Verde transportation planning effort currently in progress.

The Far View housing project could displace wildlife temporarily in an area adjacent to the Far View lodging complex. There would be a cumulative short-term, negligible to minor adverse impact to wildlife and habitats locally as a result of wildlife displacement or the temporary disruption of wildlife's normal activities. This cumulative effect would have a range of effects depending on when the housing project actions would occur. However, these potential cumulative effects would be short-term as wildlife populations would recover after the construction, development actions, and habitat rehabilitation are complete.

The transportation plan's potential cumulative effect on wildlife could entail a range of effects, depending on specific decisions yet to be made. If the transportation plan reduces the number of private vehicles entering the Far View area, then wildlife would likely experience a negligible to minor, long-term beneficial impact as a result of fewer mortalities and injuries associated with vehicle collisions. On the other hand, if private vehicle use does not change, there would not likely be any cumulative impact stemming from interaction of the transportation plan with the rehabilitation of the Far View lodging complex.

The fire management plan would potentially affect wildlife habitat as a result of mechanical thinning and prescriptive burning to reduce fuel loads. Although these efforts, combined with the effects of Alternative A, would have a short-term, local, negligible adverse cumulative impact on wildlife habitat, the long-term cumulative effects would be beneficial as the severity and extent of wildfire would be reduced.

In the long-term, Alternative A would not contribute substantively to any incremental changes in existing wildlife populations or habitat conditions in combination with other plans and projects. Therefore, Alternative A would not be considered an important contributor to cumulative effects on wildlife populations or wildlife habitats.

Conclusion

Alternative A would not affect existing wildlife populations or habitat conditions in Mesa Verde National Park. Cumulative effects in conjunction with the Far View housing project would be

short-term, local, and negligible, while the cumulative effect of this alternative with the transportation plan would vary depending on whether the number of private vehicles would change.

Alternative A would not produce major adverse impacts on wildlife or habitats whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of wildlife or habitats as a result of the implementation of Alternative A.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Alternative B would have little effect on existing wildlife or wildlife habitats in the Far View lodging complex. Some of the informal (i.e., social) trails that have arisen around the lodging units would be paved, but overall there would be a decrease in the amount of impervious surfaces. Construction activities associated with rehabilitation of the units would have a temporary, local, adverse effect on wildlife as a result of noise and disturbance. However, these effects would not prevent wildlife from undertaking its normal foraging, breeding, or resting activities in nearby similar habitats, thus the adverse effect would be negligible. Rehabilitation activities around the lodging units would provide an opportunity to remove some exotic vegetation and allow for restoration of native vegetation in former parking or development areas. In the long-term, additional native vegetation around the Far View lodging complex would represent a negligible to minor benefit for local small mammal, avian, and insect populations.

The introduction of activity to the Far View lodging complex in the winter months has potential to adversely affect wildlife that currently use the area when it is unoccupied. The effect would likely be displacement because wildlife would have alternate areas nearby with suitable resting and foraging habitat. This displacement would not have any population level effects and could be characterized as a negligible to minor, local, long-term adverse impact on some wildlife individuals. Adverse effects at the species or population level would not likely occur.

Cumulative Effects

Other plans and projects with the potential to have a cumulative effect on wildlife include the Far View housing project, the transportation planning efforts now underway, and the fire management plan, also in preparation.

The Far View housing project could adversely affect wildlife temporarily in an area adjacent to the Far View lodging complex. The disturbance and displacement effects would likely be amplified if the housing and lodging projects were in active construction phases simultaneously. To avoid compounding displacement and disturbance effects on wildlife, the housing project

and rehabilitation of the lodging units would not be concurrent. This would help to minimize and offset a potential cumulative adverse impact on wildlife in the greater Far View area.

The transportation plan has potential to affect wildlife in the Far View area in a beneficial manner. If the number of private vehicles traveling through the park were reduced as a result of new transportation options, wildlife mortality would likely decrease and the fragmentation effect of high traffic volumes would be reduced. This would represent a negligible to minor, local, beneficial cumulative impact on wildlife in the Far View lodging complex.

The fire management plan would potentially affect wildlife habitat as a result of mechanical thinning and prescriptive burning to reduce fuel loads. Although these efforts, combined with the effects of the proposed action, would have a short-term, local, negligible adverse cumulative impact on wildlife habitat, the long-term cumulative effects would be beneficial as the severity and extent of wildfire would be reduced.

Alternative B would contribute to cumulative adverse disturbance and displacement effects on wildlife in a small way as a result of activities associated with rehabilitation of the lodging units. This short-term adverse effect would be offset by the long-term restoration potential for native vegetation that would be part of the proposed action.

Conclusion

Alternative B would have a temporary, local, negligible adverse effect on wildlife and habitats as a result of noise or disturbance associated with rehabilitation of the lodging units. However, the activities would not prevent wildlife from undertaking its normal foraging, breeding, or resting activities, as surrounding habitats would be available for wildlife use. Winter use of the lodging complex would represent a negligible to minor, local, long-term adverse impact on some wildlife individuals that may currently use the area during the winter season when the complex is not occupied by people. In the long-term, a reduction of exotic vegetation and restoration of native vegetation in and around the lodging complex would provide a negligible to minor, beneficial impact to local wildlife habitats. Cumulative effects in conjunction with the Far View housing project and fire management plan would be short-term, local, and negligible, while the cumulative effect of this alternative in concert with the transportation plan would vary depending on whether the number of private vehicles would change. In the long-term, the fire management plan would cumulatively benefit wildlife and wildlife habitat as the fuels management efforts would reduce the potential for catastrophic wildfire which could totally destroy habitat.

Alternative B would not produce major adverse impacts on wildlife or habitats whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of wildlife or habitats as a result of the implementation of the Alternative B.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

Alternative C would have potential adverse effects on wildlife and habitats similar to, but at a slightly higher intensity than Alternative B because the rehabilitation and expansion would affect virtually all the area within the Far View lodging complex. Phasing the project would offset some of the adverse impacts as only a portion of the site would be affected at a given time. However, the newly graded site also would increase the potential for the establishment of additional exotic vegetation that could be introduced by vehicles or visitors. The adverse impact of Alternative C on wildlife, native species' diversity, and habitats in the Far View lodging complex would be minor and would be short- and long-term with respect to disturbance from construction activities and long-term with the introduction of winter use. These adverse impacts would be related to the loss of native shrubs that currently grow in the complex. With the introduction of a highly-managed landscape in the complex, it is likely that species that depend on the native shrub habitat, such as the green-tailed towhee, would be displaced to areas of native habitat outside the complex. Depending on the ability to restore native vegetation and inhibit the establishment of exotic species on the newly-graded landscape, a negligible to minor beneficial impact to wildlife and habitats could accrue.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B.

Conclusion

Alternative C would have minor, local, short- and long-term adverse impacts on wildlife and habitats as a result of disturbance during construction and the introduction of winter use to the lodging complex. There is potential for some beneficial effects depending on the ability to restore native vegetation and manage exotic plant species throughout the newly-graded complex. Cumulative effects in conjunction with the Far View housing project would be short-term, local, and negligible, while the cumulative effect of this alternative in concert with the transportation plan would vary depending on whether the number of private vehicles would change.

Alternative C would not produce major adverse impacts on wildlife or habitats whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of wildlife or habitats as a result of the implementation of the Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Effects on wildlife and habitats for Alternative D would be similar to those described for Alternative C. The project would not be constructed in phases under this alternative, resulting in an incremental increase in the short-term minor adverse effect on wildlife. The potential amount of unfragmented habitat that could be restored with native vegetation would be greater under Alternative D, thus decreasing some of the potential for long-term adverse impact. The decrease would be dependent on successful restoration of native species and habitat, which would be difficult in the arid environs of Mesa Verde. Construction of consolidated lodging buildings and demolition of the existing units would affect the landscape over virtually the entire complex. The potential for eliminating exotic vegetation and restoring native species also would be the same as that described for Alternative C. Similarly, the introduction of winter use under Alternative D also would have the same effects as Alternative C.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternatives B and C.

Conclusion

Alternative D would have negligible, local, short- and long-term adverse impacts on wildlife and habitats as a result of disturbance during construction of the new building and the introduction of winter use to the Far View lodging complex. There is potential for some beneficial effects depending on the ability to restore native vegetation and manage exotic plant species throughout the newly-graded complex. Cumulative effects in conjunction with the Far View housing project would be short-term, local, and negligible, while the cumulative effect of this alternative in concert with the transportation plan would vary depending on whether the number of private vehicles would change.

Alternative D would not produce major adverse impacts on wildlife or habitats whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of wildlife or habitats as a result of the implementation of the Alternative D.

CULTURAL RESOURCES

AFFECTED ENVIRONMENT

Cultural resources of concern for the Far View lodging complex action include archeological sites. The National Historic Preservation Act and its implementing regulations provide guidance for deciding whether cultural resources are of sufficient importance to be determined eligible for listing in the National Register of Historic Places (National Register).

Historic properties include only cultural resources that are listed in, or eligible for listing in, the National Register of Historic Places. However, for purposes of this environmental assessment and assessment of effect, potentially eligible and unevaluated resources (that is, cultural resources that have not been evaluated for National Register eligibility) would be afforded the same level of protection as listed or eligible historic properties.

Archeological Resources

Mesa Verde National Park was established on June 29, 1906 to preserve "from injury or spoliation the ruins and other works and relics of prehistoric man." Mesa Verde National Park is one of the largest and most important archeological preserves in the nation. It is the only National Park devoted primarily to preserving prehistoric resources and was designated as a World Heritage Cultural Site on September 8, 1978. This designation signifies that the resources found within Mesa Verde National Park contain outstanding values of importance to all humankind and must be preserved as part of our global heritage. Mesa Verde National Park contains exceptionally well preserved examples of the architecture and associated artifacts left behind by the ancestors of today's Pueblo Indians. Many of these sites are the famous alcove sites, or cliff dwellings; pueblos built into the alcoves located in the sandstone cliff band, that are recognizable throughout the world. All of the archeological sites within Mesa Verde National Park are considered priceless and irreplaceable and are eligible for the National Register of Historic Places.

These archeological resources represent examples of the Northern San Juan Ancestral Puebloan sites. These resources can be found in concentration on the mesa tops, talus slopes, canyon bottoms, and alcoves located along the cliff bands throughout the Park. The Ancestral Puebloans occupied the Mesa Verde area for 800 years (A.D. 500-1300) and constructed structures such as earthen pit houses, jacal and masonry pueblos, reservoirs, farming terraces, check dams, tower/kiva complexes and artifact concentrations. The majority of these sites range from Basketmaker III (A.D. 500-750), Pueblo I (A.D. 750-900), Pueblo II (A.D. 900-1150), to Pueblo III (A.D. 1150-1300) time periods.

While the cliff dwellings are most famous, they represent only the last 100 years or so of the 700 years of habitation of the Mesa Verde area by the Ancestral Puebloans. The park contains thousands of other archeological sites, although none are as well preserved as the cliff dwellings, which are sheltered from the elements by the cliff alcoves. Hundreds of previously unknown archeological sites were discovered and recorded within the past 10 years in the aftermath of major fires within the park. Most of the park's archeological sites are unexcavated, and are fairly

well protected from further deterioration by the dry climate and the layer of soil that has accumulated over them.

The entire park is an archeological district determined eligible for the National Register of Historic Places, so unless otherwise identified, all sites within these areas also are considered as listed and must be managed accordingly.

Numerous sites are scattered across Chapin Mesa, and about 14 sites have been recorded in the Far View area. In 1963 a Pueblo II site consisting of three rooms and a kiva were excavated at Far View (Ives pers. comm. 2003). It is unclear from the available records whether additional portions of this site, or other currently unidentified subsurface archeological remains, are buried at the Far View lodging complex.

METHODOLOGY

Impacts on potentially eligible cultural resources are described in terms of type, context, duration, and intensity, consistent with the regulations of the Council on Environmental Quality (1978) that implement the National Environmental Policy Act. These impact analyses also are intended to comply with the requirements of Section 106 of the National Historic Preservation Act. In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 *Code of Federal Regulations* Part 800, Protection of Historic Properties), impacts on cultural resources were identified and evaluated by:

- Determining the area of potential effects;
- Identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places;
- Applying the criteria of adverse effect on affected cultural resources either listed in or eligible to be listed in the National Register; and
- Considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council's regulations, a determination of either *adverse effect* or *no adverse effect* must also be made for affected cultural resources. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register. For example, this could include diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternative that would occur later in time, be farther removed in distance, or be cumulative (36 *Code of Federal Regulations* Part 800.5, Assessment of Adverse Effects). A determination of no adverse effect means there may be an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Council on Environmental Quality (1978) regulations and *Director's Order No. 12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001a) call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the

mitigation would be in reducing the intensity of a potential impact, such as reducing the intensity of an impact from major to moderate or minor. Any resulting reduction in intensity of impact because of mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Although adverse effects under Section 106 may be mitigated, the effect remains adverse.

A Section 106 summary is included in the impact analysis for cultural resources. The summary is intended to meet the requirements of Section 106 and is an assessment of the effect of implementing the alternative on cultural resources, based on the criteria of effect and adverse effect found in the Advisory Council's regulations.

The geographic area that was evaluated for impacts on cultural resources (the Area of Potential Effect or APE) includes the Far View lodging complex area, adjacent roadway system, and wastewater treatment facility lagoon area. Cumulative effects that would occur both within and outside of these areas were determined based on the "Cumulative Effects Analysis Method" section.

Archeological Resources

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Archeological resources have the potential to answer, in whole or in part, such research questions. An archeological site can be eligible to be listed in the National Register of Historic Places if the site has yielded, or may be likely to yield, information important in prehistory or history. An archeological site can be nominated to the National Register in one of three historic contexts or levels of significance: local, state, or national (see National Register Bulletin No. 15, *How to Apply the National Register Criteria for Evaluation*, NPS 2002d). For purposes of analyzing impacts on archeological resources, thresholds of change for the intensity of an impact are based on the potential of the site to yield information important in prehistory or history, as well as the probable historic context of the affected site. Impact definition thresholds for archeological resources are as follows:

Negligible: There would be no impacts on any archeological property potentially eligible for or listed in the National Register of Historic Places.

Minor: Impacts on an archeological property potentially eligible for or listed in the National Register of Historic Places would be anticipated. However, these effects would be minor in number, extent, and/or duration. Minor impacts, for example, could include temporary disturbances (such as indirect noise from construction activities) that would not alter the character for which the property has been listed, and the site would be returned to its original state following the action.

Moderate: Impacts on an archeological property potentially eligible for or listed in the National Register of Historic Places would be anticipated, and these effects would be greater in number, extent, and/or duration than minor impacts. Moderate impacts, for example could include disturbances (such as the long-term physical alternation of a site that would require mitigation through data recovery techniques) that could alter the

character for which the property has been listed, and the site might not resume its original state following the action.

Major: Impacts on an archeological property potentially eligible for or listed in the National Register of Historic Places would be anticipated, and these effects would be more substantial in number, extent, and/or duration than moderate impacts. Major adverse impacts could result in the alteration of the character for which the property has been listed, thus potentially disqualifying the property from remaining in the National Register. Examples of major adverse impacts include isolation of a property from or alteration of the character of a property's setting, including removal from its historic location; the introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting; and neglect of a property resulting in its deterioration or destruction.

Impairment: Loss, destruction, or degradation of an archeological property, resource, or value without mitigation would occur to the point that it would adversely affect the purpose and visitor experience at Mesa Verde National Park.

In the absence of quantitative data concerning the full extent of actions under a proposed alternative, best professional judgment prevailed.

Issues

Cultural resource issues that were identified and addressed in the impact analysis included:

- Existing structures at the Far View lodging complex are architecturally incompatible with each other and with the park's historic architecture and themes, and

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

ARCHEOLOGICAL RESOURCES

This alternative would not involve any construction activities. Therefore, implementation of Alternative A would have no effect on known archeological resources that are either listed in or could be eligible for listing in the National Register of Historic Places.

Cumulative Effects

Throughout the park and on other federal lands in the region, sites would continue to be protected and artifacts would continue to be preserved in accordance with federal and state requirements. However, despite this protection, moderate, adverse effects on cultural resources will continue to occur regionally. These include the deliberate disturbance of archeological sites and removal of artifacts during pot-hunting, and the loss of both archeological and historical sites to urban and residential development, agriculture, fire, and erosion. The contribution of Alternative A to these regional effects would be negligible.

Conclusion

Continuation of existing conditions would have a negligible adverse effect on archeological resources. Although regionally moderate cumulative impacts are indicated, the contribution of Alternative A to these cumulative impacts would be negligible.

Alternative A would not produce major adverse impacts on cultural resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the park's cultural resources as a result of the implementation of Alternative A.

IMPACTS OF ALTERNATIVE B - REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Alternative B proposes rehabilitation of the lodge and lodging units to upgrade the facilities and make them more accessible. The roadways and circulation patterns would remain much the same except the overflow parking area would be removed. Several individual buildings would be joined to create a single, larger structure, but this work generally would occur in previously disturbed areas. Minimal changes in site grading would be conducted, and walkway improvements would retain the same or similar footprint and location. The project also includes an upgrade of the Far View secondary wastewater treatment facility located southeast of the park entrance road.

ARCHEOLOGICAL RESOURCES

The existing Far View development (including the lodging facilities, the Terrace restaurant, parking areas, and connecting roadways) was built during the 1960s and 1970s on Chapin Mesa, an area rich in archeological resources. Site 5MT885 dating to Pueblo II times was excavated at Far View in the 1960s, suggesting potential for encountering other presently unknown archeological resources during construction. However, park archeologists have examined the ground surface in the area of potential effect, and no surface indications of buried archeological resources were noted (Trap pers. comm. 2004).

Once the final plans and site-specific building footprints have been developed, but before any ground disturbance, further in-depth archeological investigations (testing or other investigations as appropriate) would be conducted in selected areas. These investigations would include the Far View lodging complex and the Far View secondary wastewater treatment facility lagoons area and connecting road, and an adjacent buffer area extending 150-feet outside of the outer edge of gravel or pavement at the perimeter of the development. Also included would be a 150-foot wide corridor encompassing the roadway surrounding the Far View wastewater treatment facility, and a 150-foot buffer surrounding the treatment ponds. Although it is not expected that the current pipeline from the lodge to the treatment ponds would be affected by

this project, there are numerous archeological sites near this line as well as the treatment ponds and the access road to the ponds.

If cultural resources were discovered, a mitigation plan would be developed in consultation with the Colorado state historic preservation officer before construction would commence. Mitigation would include relocating construction activities to avoid archeological sites. Additional mitigation measures are described in Table 3 and summarized below. Before and during construction or rehabilitation of the new lodging facilities, best management practices would be used to protect archeological resources. Such practices include monitoring of project work by an archeologist, identification and protection of known resources, development of mitigation measures for inadvertently discovered resources, inclusion of stop-work and protective provisions in construction documents, and informing and educating construction crews.

At Far View there is the potential for archeological resources to exist within the area of potential effect. However, the adverse effects of Alternative B on archeological resources at Far View would be local, long-term, and negligible to minor in intensity because:

- Ground modification would primarily occur in previously disturbed areas, with only a small new area of disturbance,
- A known archeological site could likely be avoided,
- There is potential to use existing utility corridors,
- Changes to the existing site layout and organization would be relatively modest,
- Construction plans would be changed to avoid resources that were discovered during the intensive design-phase surveys, and
- Best management practices listed in Table 3 would be used.

Cumulative Effects

Regionally, cumulative effects associated with pot-hunting and the loss of archeological and historical sites to urban and residential development, agriculture, fire, and erosion would be similar to Alternative A. Given the disturbed nature of the development area and the relatively small amount of additional disturbance proposed under this alternative, the adverse cumulative contribution of Alternative B to these regional effects would be negligible.

Conclusion

With mitigation, implementation of Alternative B would have local, long-term, and negligible to minor adverse impacts on archeological resources. Given the relatively local nature of the project, the amount of area affected, and the existing amount of disturbance, the contribution of Alternative B to regional cumulative effects would be negligible.

Alternative B would not produce major adverse impacts on cultural resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the park's cultural resources as a result of the implementation of Alternative B.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

ARCHEOLOGICAL RESOURCES

Provisions for identification, evaluation, and protection of archeological resources would be the same as described for Alternative B. Wherever possible, the new lodging units would be grouped and sited to utilize areas of previous development, but building construction and grading to maximize view shed and drainage would still disturb and excavate a fairly large area at depth. Demolition of the existing units and rehabilitation of the ground areas would be guided by a demolition plan that would include provisions for monitoring and identification, evaluation, and protection of subsurface resources.

Modification of parking lots and circulation patterns to improve visitor safety and accessibility also would involve extensive ground disturbance, and increase the potential to encounter unidentified, deeply buried archeological site(s). As discussed for Alternative B, archeological testing would be conducted in selected areas, and if inadvertent discoveries are made, the project would be redesigned to avoid any archeological resources. If previously unknown sites or additional areas of site 5MT885 were discovered during construction, the measures described for Alternative B would be taken to mitigate adverse effects. This would include developing a mitigation plan in consultation with the state historic preservation officer. Using the best management practices listed above and in Table 3, the adverse effects of Alternative C on archeological resources at the Far View lodging complex would be local, long-term, and minor to moderate in intensity. Upgrades to the Far View wastewater treatment facility could also affect buried resources. Although it is not expected that the current pipeline from the lodge to the treatment ponds would be affected by this project, there are numerous archeological sites near this line as well as adjacent to the treatment ponds and the access road to the ponds.

Using the best management practices described in Table 3, the adverse effects of Alternative C on archeological resources at the Far View lodging complex would be local, long-term, and moderate in intensity because:

- With the proposed landscape changes and building demolition, ground modification would involve the entire developed area,
- A known archeological site could possibly be avoided, but remnants could be affected,
- Changes to the existing site layout and organization would be fairly extensive,

- There is potential to use existing utility corridors
- Construction plans would be changed to avoid resources that were discovered during the intensive design-phase surveys, and
- Best management practices listed in Table 3 would be used.

Cumulative Effects

Regional cumulative effects associated with pot-hunting and the loss of archeological and historical sites to urban and residential development, agriculture, fire, and erosion would be similar to Alternative A. Given the relatively local nature of the project, the amount of area affected, and the existing amount of disturbance, the contribution of Alternative C to these regional effects would be negligible.

Conclusion

With mitigation, implementation of Alternative C would have a local, long-term, moderate adverse impact on archeological resources because of the amount of ground modification, changes in site layout, and the potential for buried resources. The new design would make the buildings at Far View more compatible with the park's architectural themes, resulting in a long-term, local, moderate beneficial effect. Alternative C would have a negligible contribution to regional cumulative effects.

Alternative C would not produce major adverse impacts on cultural resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the park's cultural resources as a result of the implementation of Alternative C.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

ARCHEOLOGICAL RESOURCES

Demolition of the existing buildings, landscape modifications, construction of the new combined facility, and upgrades to the Far View wastewater treatment facility would have the potential to adversely impact existing archeological site 5MT885, as well as other unknown buried resources. Although it is not expected that the current pipeline from the lodge to the treatment ponds would be affected by this project, there are numerous archeological sites near this line as well as adjacent to the treatment ponds and the access road to the ponds. To minimize potential impacts on archeological resources, demolition of the existing units and rehabilitation of the ground areas would be guided by the demolition plan discussed in Alternative C. Provisions for identification, evaluation, and protection of archeological

resources would be the same as described for Alternative B. Wherever possible, new construction would be sited to utilize areas of previous impact and to avoid a known site, but building construction and grading to maximize view shed and drainage would still disturb a fairly large area at depth.

Modification of parking lots and circulation patterns to improve visitor safety and accessibility also would involve extensive ground disturbance, and increase the potential to encounter deeply buried archeological site(s). As discussed for Alternative B, archeological testing or other investigations as appropriate would be conducted in selected areas, and the project would be redesigned to avoid any known archeological resources. If previously unknown sites or additional areas of site 5MT885 were discovered during construction, the measures described for Alternative B would be taken to mitigate adverse effects. This would include developing a mitigation plan in consultation with the state historic preservation officer. Using the best management practices listed above and in Table 3, the adverse effects of Alternative D on archeological resources at the Far View lodging complex would be local, long-term, and minor to moderate in intensity.

Cumulative Effects

Regional cumulative effects associated with pot-hunting and the loss of archeological and historical sites to urban and residential development, agriculture, fire, and erosion would be similar to Alternative A. Given the relatively local nature of the project, the amount of area affected, and the existing amount of disturbance, the contribution of Alternative D to these regional effects would be negligible.

Conclusion

With mitigation, the adverse effects of Alternative D on archeological resources at Far View would be local, long-term, and minor to moderate in intensity because of the amount of ground disturbance and potential for buried resources. Benefits would accrue by making the site more compatible with the park's architectural themes. Because of the small area affected and the existing disturbance, Alternative D would have a negligible contribution to regional cumulative effects on cultural resources.

Alternative D would not produce major adverse impacts on cultural resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other NPS planning documents. Consequently, there would be no impairment of the park's cultural resources as a result of the implementation of Alternative D.

SECTION 106 SUMMARY

This environmental assessment provides detailed descriptions of four alternatives (including a No Action/Continue Current Management Alternative), analyzes the potential impacts associated with possible implementation of each alternative, and describes the rationale for choosing the preferred alternative. Also contained in the environmental assessment are mitigation measures that would help avoid adverse effects on cultural resources.

For example, potential ground-disturbing activities such as grading to modify the landscape, or excavations for the building foundations would be carefully planned in areas containing cultural sites. Prior to construction activities, work limits would be established, and measures would be taken to protect known archeological sites. Work crews would be instructed about the sensitivity and importance of cultural sites.

To reduce unauthorized collecting from areas, construction personnel would be educated about cultural resources in general and the need to protect any cultural resources encountered. Work crews would be instructed regarding the illegality of collecting artifacts on federal lands to avoid any potential Archeological Resources Preservatives Act violations. This would include instructions for notifying appropriate personnel if human remains were discovered. In the event that cultural resources were discovered during construction, work would be halted in the vicinity of the resource, and procedures outlined in 36 *Code of Federal Regulations* 800 would be followed.

Mesa Verde National Park staff would continue to educate visitors regarding archeological site etiquette to provide long-term protection for surface artifacts and architectural features.

This environmental assessment and assessment of effect will be sent to the Colorado State Historic Preservation Office for review and comment as part of the Section 106 compliance for the project area. The area of potential effect has been examined by park archeologists, and no surface indications of buried archeological sites were identified (Trap personal communication February, 2004). Prior to implementation of the selected alternative, further investigations (testing of selected areas or other investigations as appropriate) and an evaluation of potential National Register of Historic Places eligibility for any sites discovered will be sent to the Colorado State Historic Preservation Office.. If necessary, additional mitigation measures would be developed in consultation with the state historic preservation o fficer at that time.

Pursuant to 36 Code of Federal Regulations Part 800.5, implementing regulations of the National Historic Preservation Act (revised regulations effective January 2001), addressing the criteria of effect and adverse effect, the National Park Service finds that the implementation of the project in Mesa Verde National Park, with identified mitigation measures, would not result in adverse effects on archeological, historic, ethnographic, cultural landscape, or museum collection resources currently identified as eligible for or listed in the National Register of Historic Places.

ACCESSIBILITY FOR INDIVIDUALS WITH IMPAIRED MOBILITY

AFFECTED ENVIRONMENT

The facilities at the Far View lodging complex only minimally meet all current Americans with Disabilities Act requirements. For example, even though the first floor bathroom is accessible, other parts of the lodge and dining areas are not readily accessible to employees or visitors with disabilities. Poorly organized and crowded conditions present problems for those in wheelchairs. Only six lodging units are compliant with accessibility requirements of the Americans with Disabilities Act. Deteriorating sidewalks and steep slopes can be challenging for the elderly or those with disabilities, and make it difficult for them to travel between the parking lots, the lodge, and lodging units.

METHODOLOGY

Impacts on accessibility for individuals with mobility impairments were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for accessibility for individuals with impaired mobility were defined as follows.

Negligible: Accessibility for individuals with disabilities would not be affected, or effects would not be noticeable or measurable.

Minor: Changes in accessibility for mobility-impaired people would be noticeable, but would affect only a small portion of the individuals with mobility-related disabilities who use the park.

Moderate: Changes in accessibility would be readily apparent to many of the individuals with mobility-related disabilities who use the park.

Major: The effects on accessibility would be readily apparent to most of the individuals with mobility-related disabilities who use the park and would substantially change their ability to access park features.

Note: Accessibility for individuals with disabilities is not considered to be a resource that is protected by the Organic Act. Therefore, accessibility for individuals with disabilities does not warrant consideration of impairment.

The geographic area that was evaluated for impacts on accessibility for individuals with disabilities included the Far View lodging complex. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Issues associated with accessibility for individuals with disabilities that were identified during scoping and addressed in the impact analysis included the inability of the current lodging facilities to accommodate visitors and staff with mobility impairments.

IMPACTS OF ALTERNATIVE A - NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would not make additional changes to accommodate persons with mobility impairments. As a result, the current adverse condition may prevent some visitors from staying overnight at Far View when accessible lodging is unavailable. The limited Americans with Disabilities Act-compliant facilities would continue to curtail visitor and concession and park employee activities such as moving about the complex in an easy and safe manner, finding an accessible restroom, or visiting all levels of the lodge. These conditions constitute a long-term, moderate adverse impact to persons with disabilities.

Cumulative Effects

Improvements in access for the disabled have resulted from implementation of the Americans with Disabilities Act. However, people with mobility impairments continue to encounter access challenges on a daily basis. Impediments include, but are not limited to, street curbing, buildings that are accessible only by stairs, and doorways and restrooms that do not accommodate people in wheelchairs. Because these all would continue regardless of actions taken within the park, Alternative A would have a negligible cumulative effect on accessibility for individuals with impaired mobility.

Conclusion

Under Alternative A, existing conditions would constitute a long-term moderate adverse impact. Cumulative impacts would be negligible.

IMPACTS OF ALTERNATIVE B - REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Implementation of Alternative B would have minor beneficial effects on accessibility for visitors and concession and park staff members. Site accessibility would be improved by making appropriate changes in site gradient, installing new sidewalks and curb cuts, remodeling selected interior spaces of the lodge and dining areas, adding an elevator to the lodge, and remodeling restrooms. Some areas of the lodge and some of the lodging units and service areas would still be partially inaccessible, although the upgraded facilities would be in conformance with accessibility laws and regulations.

Cumulative Effects

All of the action alternatives would improve access for park visitors and park and concession employees with impaired mobility. However, these people would continue to be challenged on a daily basis in Montezuma County, across Colorado and the country by street curbing, buildings

accessible only by stairs, and doorways and restrooms that do not accommodate people in wheelchairs. As a result, the improvements that would result from Alternative B would have only a minor beneficial cumulative effect on access for mobility-impaired people.

Conclusion

Implementation of Alternative B would have minor beneficial effects on accessibility for visitors and staff (some areas would still be relatively inaccessible). Cumulative impacts would be beneficial, but minor.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

Implementation of Alternative C would have moderate beneficial effects on accessibility for visitors and concession and park staff. Site accessibility would be improved with redesigned circulation patterns with additional provisions for visitor accessibility. Changes also would be made in the vehicle transit and parking lot areas to facilitate easy access. All levels of the lodge would be fully accessible to visitors and staff; more service areas would be accessible; and addition of an elevator and accessible restroom would improve existing conditions in the lodge. A majority of the lodging units would be compliant with Americans with Disabilities Act standards.

Cumulative Effects

The cumulative effects on persons with impaired mobility would be similar to the effects described for Alternative B.

Conclusion

Implementation of Alternative C would have moderate beneficial effects on accessibility for visitors and staff because more of the lodging units and facilities would be accessible. Cumulative impacts would be beneficial, but minor.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Implementation of Alternative D would have moderate beneficial effects on accessibility for visitors and staff. Site accessibility would be improved with redesigned circulation patterns with additional provisions for visitor accessibility. Changes also would be made in the vehicle transit and parking lot areas to facilitate easy access. All levels of the new lodge would be fully accessible to visitors and staff; more service areas would be accessible; elevators and accessible restrooms would improve existing conditions in the lodge, and more of the lodging units would

be accessible. By concentrating most of the visitor facilities in one area, visitors could more easily and quickly access their rooms, parking, and outdoor activity areas.

Minimal changes would be made to meet Americans with Disabilities Act accessibility requirements in the lodge, including installation of an elevator, resulting in a minor beneficial improvement for staff following conversion of the lodge to primarily NPS use.

Cumulative Effects

The cumulative effects on persons with impaired mobility would be similar to the effects described for Alternatives B and C.

Conclusion

Implementation of Alternative D would have moderate beneficial effects on accessibility for visitors and concession and park staff because more of the lodging units and facilities would be accessible. Rehabilitation of the lodge would involve minimal work to meet Americans with Disabilities Act accessibility requirements, resulting in a minor benefit for park employees. Cumulative impacts would be beneficial, but minor.

ECONOMICS AND SOCIOECONOMICS

AFFECTED ENVIRONMENT

Mesa Verde National Park is located in Montezuma County, Colorado. Montezuma County encompasses 2,037 square miles. The county seat is in Cortez, about 10 miles west of the park entrance. The largest cities in Montezuma County include:

- Cortez, population 7,977, which is about 10 miles west of the park entrance;
- Mancos, population 1,119, which is about 8 miles east of the park entrance; and
- Dolores, population 857, which is about 8 miles north of Cortez.

The population of Montezuma County in 2000 was 23,830 people. This was a 28 percent increase over 1990. The population of the county grew at a rate similar to that of the state of Colorado, which saw a population increase of 31 percent during the decade.

About 82 percent of the county's citizens identified themselves as white. American Indians constituted 11 percent of the population. The remaining 7 percent of the population identified other ethnic backgrounds. About 10 percent of residents identified themselves as also having Latino or Hispanic heritage.

About 4.5 percent of the county's citizens are mobility or self-care disabled. Of this group, 6 percent are between 16-64 years of age and 22 percent are 65 years of age or older. Nearly 9 percent of the county's disabled citizens are also work disabled.

Of the county's 11,434 employable individuals; about 2,267 employees work in local, state, or federal government agencies; 8,378 were private wage and salary workers, were self-employed in not-incorporated businesses, or were family workers; and 789 were unemployed.

Among employed workers in both the private and public sectors, the largest employers, which accounted for almost two-thirds of the county's employment, are identified in Table 8. The number of construction companies in Montezuma County is currently between 90 and 122. The construction industry employs about 15 percent of the county's employment pool and produces about $11 million in construction services.

Based on year-round 2003 data, the average daily lodging rate in Montezuma County ranges from $45.00 to $88.00 per night (Tripadvisor 2003). Lodging rates currently charged by the concessioner for lodging at Far View are $100.00 to $122.00. Fees are updated annually based on the regional lodging market.

TABLE 8. THE YEAR 2000 CIVILIAN LABOR FORCE, MONTEZUMA COUNTY, COLORADO

Labor Source	Total Employees	Percent of Labor Force Employed
Retail trade	1,485	14
Education, health, and social services	2,336	22
Construction	1,589	15
Accommodations, food services, entertainment, recreation, and arts	1,190	11

Source: Year 2000 census data from the U.S. Census Bureau's Internet site (http://www.census.gov).

Approximately 513,000 and 406,000 persons visited Mesa Verde in 2001 and 2002, respectively. These numbers are reduced from the 631,000 20-year average because of the wildfires that closed the park during the peak visitor seasons. Of these visitors who did come to Mesa Verde in 2001 and 2002, over 41,400 stayed at the Far View lodging units yearly (2001 and 2002 average). There are 150 units available and the total nightly rates range from $100 for a standard (94 available), $112 for a deluxe (40 available with amenities such as coffeemaker, refrigerator, iron & ironing board), to $122 for the kiva class (16 available with a king size bed plus amenities) lodging units. The number of rooms available for accommodation in Montezuma County is between 1,100 and 1,150 and year-round prices range from $25.00 per night to $150.00 per night (Tripadvisor 2003).

According to *Management Policies 2001* (NPS 2000b), "The National Park Service must approve all rates charged to visitors by concessioners. The reasonableness of a concessioner's rates and charges to the public will, unless otherwise provided in the contract, be judged primarily on the basis of comparison with current rates and charges for facilities and services of comparable character under similar conditions. Due consideration will be given to length of season, provision for peak loads, average percentage of occupancy, accessibility, availability and costs of labor and materials, type of patronage, and other factors deemed significant by the Director." It should be noted that comparables from La Plata and Montezuma counties as well as Moab, Utah, and Farmington, New Mexico, are utilized to determine rates for the Far View lodging complex.

The county has a tax on lodging services including hotels, motels, condominiums and camping spaces. The county lodging tax is 1.9 percent and monies are remitted to the Colorado Department of Revenue on a quarterly basis (Colorado Department of Revenue 2003).

METHODOLOGY

Impacts on economics and socioeconomics were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for economics and socioeconomics were defined as follows.

Negligible: Economic and socioeconomic conditions would not be affected, or effects would not be measurable.

Minor: The effects on economic and socioeconomic conditions would be small but measurable, and would affect a small portion of the population. Few effects could be discerned outside of the Cortez and Mancos areas.

Moderate: The effects on economic and socioeconomic conditions would be readily apparent and widespread in the vicinity of Cortez and Mancos, and the effects would be evident throughout Montezuma County.

Major: The effects on economic and socioeconomic conditions would be readily apparent and would substantially change the economy or social services within Montezuma County.

Economics and socioeconomics are not considered to be resources that are protected by the Organic Act. Therefore, economics and socioeconomics do not warrant consideration of impairment.

Geographic Area Evaluated For Impacts. The geographic area that was evaluated for impacts on economics and socioeconomics was Montezuma County. The lodging and dining service area analyzed included 51 restaurants/dining facilities and 21 hotels/motels located in Cortez, Dolores, and Mancos. Dining facilities analyzed included those classified as providing breakfast, lunch, and dinner, or lunch and dinner, and dinner only services.

Economic and socioeconomic issues that were identified during public scoping and addressed in the impact analysis included:

- The range of room types and rates of lodging.
- Concessioner's costs of doing business.
- The effect of concession operations on local construction contracts.
- The effect of the project on the county tax base.

IMPACTS OF ALTERNATIVE A - NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would not include any new construction or the renovation of the existing lodge or lodging units. In the short term, NPS and concessioner staff positions currently assigned to the Far View Lodge would continue to be employed during the primary visitor use seasons. However, the lodge and lodging units would continue to deteriorate, eventually would become costly to repair, and some lodging units would likely be taken out of service.

The Range of Room Types and Rates of Lodging

In the short-term, Alternative A would have a negligible effect on the range of room types and rates of lodging. In the long term, the removal of several of the lodging units from Far View because of their continued deterioration would have an adverse effect on the availability of lodging available for park visitors. While this could make in-park lodging more difficult for visitors to obtain, its economic effects probably could not be discerned outside of the park. Therefore, the intensity of effect on room types and rates would be negligible.

The total room rates for the lodging units charged at the Far View lodging complex (about $100 to $122) are similar, but slightly higher than the rates for similar lodging in the local market. However, staying overnight within the park enables visitors to experience the landscape and surrounding environment that they would not experience if staying in Cortez and Mancos. In-park lodging services also reduce travel costs to and from various park destinations and dining facilities are more conveniently located.

The current variety of lodging options would remain available as long as the units remained in service. However, the lodging units are deteriorating rapidly and many buildings will not continue to be usable. As a result, Alternative A would have a long-term, adverse effect on the availability of lodging types for visitors. Because the effects probably could not be measurable outside of the park, and lodging is provided in Cortez and Mancos, the intensity of effect on economic and socioeconomics would be negligible.

The Concessioner's Cost of Doing Business

Wages are the largest cost incurred by the concessioner in fulfilling the contract to provide lodging services at Far View. Each summer, the concessioner adds about 215 seasonal employees to their year-round staff of 10 people (NPS 1998c). Many of these seasonal positions are paid slightly above the minimum wage and the concessioner attracts and retains employees for these positions by providing in-park housing at subsidized costs. Lodging and dining supplies are slightly more expensive than competitors because they must be shipped or trucked further. Vendors must travel 15 miles from the main highway to deliver supplies to the Far View complex.

In the short term, Alternative A would have a negligible effect on the concessioner's cost of doing business. In the long term, maintenance costs would rise as the lodging units deteriorate and increase even further as lodging units are removed from service. Based on current market rates, lodging supplies may cost the concessioner little more than current costs. However, as a result of the increased maintenance expenditure, Alternative A would have a long-term, minor, adverse effect on the concessioner's cost of doing business in Mesa Verde National Park. These costs would likely be passed on to park visitors in the form of higher charges for meals, lodging, tours, and other services provided by the concessioner.

The Effect of Concession Operations on Construction Contracts

As described in the "Affected Environment" section, the number of available construction companies in Montezuma County is currently between 90 and 122. The construction industry contributes about $11 million in revenues in the county. The construction revenues indicate that the construction industry is one of the top 10 businesses in the county and a sufficient number of

contractors are available to conduct building repair work at Far View. Alternative A would have no effect on construction contractors in Montezuma County because there would be little or no new construction work associated with this alternative.

The Effect of the Project on the County Tax Base

The county's economy relies heavily on the tourism industry. A portion of the county's tax base comes from the county lodging tax. The park's concessioner is the largest contributor to the county tax base. Assuming that the number of lodging units at the Far View complex would decrease because of maintenance-related problems, Alternative A would potentially decrease the county tax base. This would represent a negligible adverse long-term impact on the county's tax base.

Cumulative Effects

The 150 lodging units represent less than 13 percent of the available rooms in Montezuma County. The change in availability of the number of rooms at the Far View complex, in conjunction with other rooms in the county, would not be measurable in the economy of the county or any of the communities within its boundaries.

The economy of Montezuma County depends heavily on tourism. Under Alternative A, Mesa Verde National Park would continue to attract visitors from throughout the nation and around the world and would continue to contribute to the county's economy. Alternative A would not contribute in any consequential way to any cumulative effects on the economy nor the socioeconomic conditions in Montezuma County.

Conclusion

In the short term, Alternative A would have negligible effects on economic and socioeconomic conditions. Long-term effects on revenues from the Far View lodging complex would be negligible. In the long term, there would be minor, adverse effects on the availability of lodging for visitors, and minor adverse effects on the concessioner's costs of doing business in Mesa Verde National Park.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

The Range of Room Types and Rates of Lodging

In the short-term, the rehabilitated lodge and lodging units would have a negligible effect compared to Alternative A. However, in the long term with Alternative B, the 150 lodging units currently provided would continue to be available to park visitors who seek lodging services. Compared to the long-term situation with Alternative A, this would be a negligible, beneficial effect on the availability of lodging for park visitors.

The cost of lodging units would likely be higher in the renovated buildings than it is in the current units. Visitors would pay increased room rates relative to the current room rates because of the upgraded rooms and dining services. The economic effect on the visitor would be long-term, adverse, and negligible. The effect of this change on the economic and socioeconomic setting of Montezuma County and its communities would be negligible.

The Concessioner's Cost of Doing Business

Compared to Alternative A in the short term, the concessioner's cost of doing business in Mesa Verde National Park might increase slightly, based on the cost of rehabilitating the lodge and lodging units. In the long term, the ability to provide quality lodging and dining services in an esthetically pleasing setting would attract more visitors. The rehabilitation effort for Alternative B would have a long-term, minor, beneficial effect on the concessioner's costs of doing business in Mesa Verde National Park.

As discussed in the description of Alternative B, the concessioner would have the option of modifying the inside of any or all of its lodging units and buildings to upgrade the quality of the lodging services. This would provide the concessioner with greater flexibility for upgrading the lodging units, and could enable the concessioner to vary the per-room rate and reduce the cost of lodging operations. The effects of this action on the economy of Montezuma County and its communities would be negligible.

The Effect of Concession Operations on Construction Contracts

As described in the "Affected Environment" section, the number of available construction companies in Montezuma County is currently between 90 and 122 providing about $11 million in construction revenues in the county. All of these companies would have an equal opportunity to bid for the construction contract. The contract would increase the available construction labor pool and bring additional economic benefits.

The short-term loss of lodging services under Alternative B that would occur during renovation would not measurably increase the lodging revenues from rooms that are rented outside of the park. It also would not increase the daily lodging rates (dollars per unit) for in-park lodging. Most construction workers would not rent rooms at Far View Lodge because they already live within commuting distance. Because of these factors, Alternative A would have a negligible short-term effect on lodging rates collected by the lodging industry in Montezuma County.

The Effect of the Project on the County Tax Base

The tourist industry accounts for about one third of the county's economy and generates lodging tax revenues for the county. Cortez reported a 7.25 percent drop in municipal lodging-tax collections when the park closed for one month during the wildfires in 2000, and there is concern about the effect of the project on the county's tax base (Colorado Biz 2001). Most of the construction work will be conducted during the low visitation period. Some phases of the rehabilitation work may be conducted while the lodging facilities are in operation. The phasing of construction may require making more double rooms available and may reduce the choices of available room types. Alternative B would provide a sufficient number of upgraded rooms to replace the units being rehabilitated in the interim. This would represent an inconsequential change in the availability of lodging in communities near the park or in Montezuma County.

The monies from the 1.9 percent county lodging tax are remitted to the Colorado Department of Revenue on a quarterly basis (Colorado Department of Revenue 2003). There could be a short-term reduction in the county's lodging tax revenues during the summer construction period. Compared to Alternative A, this would have a short-term minor adverse effect on the county tax base. Over the long-term, extending the lodging operation into the winter would increase the county tax base during the last quarter of the year. Overall, compared to Alternative A, there would be a minor, beneficial effect on the county tax base by extending lodging operations into the winter.

Cumulative Effects

Most cumulative effects of Alternative B would be similar to those described for Alternative A. In addition, Alternative B would provide the concessioner with beneficial effects in the future if the lodging service were converted to year-round use. In the long term, the ability to provide in-park lodging in an esthetically pleasing setting would help the concessioner maintain revenues close to their current levels. With Alternative B, the concessioner could have the opportunity to offer winter lodging. The cost of doing business would be maintained in proportion to the long-term benefit.

Conclusion

In the short-term, Alternative B would have negligible effects on economic and socioeconomic conditions in the county. Long-term effects on revenues from the Far View lodging complex also would be negligible. In the short-term, there would be negligible, adverse effects on the availability of lodging for visitors as a result of renovation work.

Compared to Alternative A, Alternative B would have negligible adverse effects on revenues from lodging, and on the county's lodging tax base. There would be a minor, adverse effect on the concessioner's costs of doing business in Mesa Verde National Park.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

The effects of Alternative C on economics and socioeconomics would be similar to those described for Alternative B. These would include similar effects on the availability and affordability of lodging for visitors, the concessioner's cost of doing business, and lodging tax revenues collected by the county.

The Range of Room Types and Rates of Lodging

Alternative C would have the same number of lodging units (i.e., 150 units) as Alternatives A and B. However, because of the uniqueness of the new facility design and the location within the park, rates would be higher and potentially, demand may change. This could result in a slightly different availability at a higher cost for the visitor. This would represent a minor to moderate short-term and long-term adverse effect because the improvements associated with the new Far

View lodging complex would be viewed as being worth the extra cost and additional reservation challenge associated with higher demand.

Although demand for lodging in the park would likely increase, the adverse effect on other local lodging enterprises, in terms of affecting demand in Cortez or Mancos, would be negligible because of the limited number of units at Far View and the higher rates at the new facility would deter some visitors from staying in the park.

The Concessioner's Cost of Doing Business

Although the costs of designing and constructing Alternative C would be higher that Alternative B, the concessioner would be able to charge more and recoup the added costs. The new facility would likely increase demand, at least in the short-term, and this would create a minor, short-term beneficial effect on the concessioner's cost of doing business in the park. Also, if year-round operation was implemented, the efficiency of being able to keep operations running year-round would help to reduce start-up and shut-down costs and would result in more negligible to minor benefits to the concessioner's costs.

The Effect of Concession Operations on Construction Contracts

There would be a minor to moderate beneficial effect on the local construction industry on a short-term basis. The impact would occur over a two year period because construction of the new units would be phased so that some lodging would remain available during construction. The intensity of the effect would be somewhat dependent of the location of the company that would construct the new facilities. With most of the available labor base most likely being from Montezuma County, that portion of the economic benefit would remain local. The same would be true if the company were also local, but that cannot be determined at this time.

The Effect of the Project on the County Tax Base

Alternative C would have a minor beneficial impact on the county tax base as revenue generated at the new Far View lodging complex would likely increase as a result of rate increases and the added winter use.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B, although there would be an incremental cumulative impact associated with Alternative C as a result of the increased rates that could affect demand at the Far View lodging complex.

Conclusion

The effects of Alternative C would range from negligibly adverse to moderately beneficial, with respect to the aspects of economic and socioeconomic conditions that were analyzed above. The greatest impact would likely be the moderate short-term beneficial effect on the local construction industry, with the minor long-term benefits to the county tax base next in magnitude. The concessioner's cost of doing business also would see minor long-term benefits.

The availability and cost of lodging at locations outside the park would experience a negligible adverse effect as would the cost and availability of lodging to the visitor.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

The effects of Alternative D on economics and socioeconomics would be similar to those described for Alternative C. These would include similar effects on the availability and affordability of lodging for visitors, the demand for lodging in the region, the concessioner's costs of doing business, and lodging tax revenues collected by the county.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternative C.

Conclusion

The effects of Alternative D would be similar to the effects of Alternative C with respect to economics and socioeconomic conditions in Montezuma County.

PARK OPERATIONS

AFFECTED ENVIRONMENT

The superintendent of Mesa Verde National Park is responsible for managing the park, its staff and residents, all of its programs, and its interactions with persons, agencies, and organizations interested in the park. Park staff provides the full scope of functions and activities to accomplish management objectives and meet requirements of law enforcement, emergency services, public health and safety, science, resource protection and management, visitor services, interpretation and education, utilities, and management support.

A description of lodging services and availability is included in the park's General Management Plan (NPS 1979). A summary of the lodging component of park operations is included in the "Purpose and Need for Action" section.

The park has an ongoing repair and rehabilitation program for park facilities. This program provides seasonal and year-round maintenance for roads, trails, parking lots, landscaping, and park utilities for the Far View lodging complex.

The park can receive substantial snowfalls during the winter, and park roads require snowplowing 20 to 40 times annually. About 60 lane miles of plowing are required with each snow event. Because snowplowing is expensive and labor-intensive, it is conducted only on roads that are critical to park operations. Because there are no winter residents or activities in the Far View area, these areas do not receive snowplowing services and can be blocked by snowdrifts for extended periods.

Current NPS personnel levels are adequate to meet the park's interpretive service needs, including guides for cliff dwelling tours and museum staff.

Fire protection, law enforcement and emergency services are provided by the National Park Service. The National Park Service has a mandate to provide a safe and secure environment for all park programs and services including the Far View lodging complex.

Both the National Park Service and the concessioner rely on inexpensive housing and/or low commuting expenses to attract and retain employees in low-pay-grade jobs. Currently, park operation employees who live within the park are assigned to residences in close proximity to their job sites or incident response stations. Most concessioner staff that live in the park are assigned to the trailers and dormitory at Far View where they have ready access to jobs at the lodge and Terrace restaurant.

The present concessioner pays a 12 percent franchise fee, of which, 80 percent is returned to the park. These fees may be used for concession related needs, environmental and energy efficiency projects, enhancement of other visitor services, or funding of high priority resource management projects. It is not known at this time what the return to the government will be under the new contract, as lodging is only one component to be included in the prospectus. However, many factors will go into determining the franchise fee rate, including the level of investment required of the new concessioner.

METHODOLOGY

Impacts on park operations were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for park operations were defined as follows.

Negligible: Park operations would not be affected, or the effect would not be measurable outside of normal variability. There would not be a noticeable effect on park operations.

Minor: The effect on park operations would be measurable, and might be noticed by park staff, but probably would not be noted by the public. If mitigation were needed to offset adverse effects, it would be relatively simple and successful.

Moderate: The effects on park operations would be readily apparent, and would result in a substantial change in park operations in a manner that would be noticeable to staff and the public. Mitigation would probably be necessary to offset adverse effects and would likely be successful.

Major: The effects on park operations would be readily apparent, and would result in a substantial change in park operations. Both staff and the public would recognize the change as being markedly different from existing operations. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

Note: Park operations are not considered to be resources that are protected by the Organic Act. Therefore, park operations do not warrant consideration of impairment.

Geographic areas evaluated for impacts to park operations were considered both park-wide, and in the specific areas where changes to the lodge and lodging units would occur. These include the Far View lodging complex and the wastewater treatment plant. Cumulative effects that would occur both within and outside of the park were determined based on the "Cumulative Effects Analysis Method" section.

Park operations issues that were identified and addressed in the impact analysis included:

- Increased requirements for visitor services and concession management operations may overload park ranger and interpretation staff which may affect visitor services.
- Increased park operation workloads may be required for snow removal, structural fire protection, and law enforcement; emergency services may effect overall park operations and efficiency.
- Extending the seasonal operations of the lodging facilities may degrade paved surfaces.

IMPACTS OF ALTERNATIVE A - NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

The seasonal operation of the Far View lodging complex would not change the needs for visitor services and concession management operations and would have no effect on park ranger and interpretation staff. In the long-term there could be a reduction in the lodging service capacity as lodging units deteriorate and are taken out of service. The continued use of the lodging complex under Alternative A would have no effects on existing snow plowing, snow removal and emergency services.

Cumulative Effects

The effects of other plans and projects on park operations at the Far View lodging complex are partially dependent on whether the other plans and projects have staffing and/or budget changes associated with them. So long as the other plans and projects have provisions to maintain the current levels of staffing, there would be no cumulative effects to park operations. However, if existing staff must be used to address tasks associated with other plans and projects, there could be an adverse cumulative impact on park operations.

Alternative A would contribute incrementally to an adverse cumulative impact on park operations because the maintenance needs at Far View would increase over time. This adverse impact would be long-term and would gradually advance from negligible to minor, as the lodging units deteriorate and more maintenance is needed.

Conclusion

Alternative A would have short- and long-term, negligible to minor adverse effects on park operations because of the demands for maintaining the lodging units, walkways, and parking areas to keep them in service. Cumulative impacts would be long-term, adverse, and have a negligible to minor effect on park operations.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Alternative B would upgrade the lodging units and provide renovated lodging units to replace the deteriorating modular units. Rehabilitation of the existing lodging buildings would increase the concessioners ability to provide better lodging services. It would also improve the NPS' ability to respond to critical park operations or emergency services. Safety communication and alarm systems would also be available in the long-term to meet park emergency response operations. Compared to Alternative A, this would have a long-term, minor beneficial effect on park operations.

Alternative B would keep all of the current road and parking facilities except for one overflow parking facility that would be removed and the site restored. Pedestrian pathways would be replaced and made wheelchair accessible, improving visitor orientation, access and safety. Extending the seasonal operations of the lodging facilities would degrade paved surfaces that have not been replaced. Compared to Alternative A, this would have a long-term, adverse, minor effect on park operations because of increased demand on staff time.

Extending the seasonal operation of the lodging facilities, Alternative B would increase the need for snow plowing and shoveling compared to Alternative A. After each substantial snowfall, the roads to the lodging complex and units would have to be plowed. The paved pathways would also need to be shoveled to allow pedestrian circulation. Snowplowing and shoveling is expensive and labor-intensive, and the additional plowing would have to be performed every winter. The impacts on park operations would be long-term, minor and have an adverse effect on park operations because three additional miles would be added for road snowplowing (about five percent of the currently plowed mileage).

Increased interpretive services associated with Alternative B would have a minor adverse effect on park operations because existing staff levels would not be adequate to provide the additional interpretive personnel. This adverse effect would be offset by adding staff and training volunteers as needed to meet the interpretive requirements.

The rehabilitated units would have lower life-cycle costs than the current units. Many of the existing modular units at Far View are at least 30 years old. Rehabilitation of these units using better materials should extend the building's longevity. The new buildings' reduced utility costs and reduced maintenance costs, also would affect the life-cycle costs favorably. However, because these costs likely would be the responsibility of the concessioner, there would not be an effect on park operations.

The installation of a new tertiary wastewater treatment plant to serve the renovated lodging complex would result in a long-term, minor beneficial effect on park operations as maintenance and operation procedures associated with the existing secondary wastewater treatment system would be more efficient and effective.

The present concessioner pays a 12 percent franchise fee, of which, 80 percent is returned to the park. These fees may be used for concession related needs, environmental and energy efficiency projects, enhancement of other visitor services, or funding of high priority resource management projects. It is not known at this time what the return to the government will be under the new contract as lodging is only one component to be included in the prospectus. However, many factors will go into determining the franchise fee rate, including the level of investment required of the new concessioner.

Cumulative Effects

The future housing at Far View and potential operation of the Far View lodging complex on a year-round basis would increase the need for both NPS and concessioner operation services in the park during the winter. The rehabilitated lodging buildings would be located close to the new Far View housing, minimizing the adverse effects on operations. Compared to Alternative

A, the upgraded lodging and improved visitor services would result in a long-term, beneficial, minor effect on park operations.

Snow removal operations that would be needed at the renovated Far View lodging complex would be an extension of similar services that would be required at the new Far View housing. As a result, park operations would experience a negligible cumulative adverse impact with the additional snow removal operations. In the event of a particularly severe winter or snow event, park operations would be adversely affected commensurately throughout the park.

National Park Service staff living in future housing at Far View would improve the capability of the mission-critical employees to respond promptly to emergencies in this segment of the park. Combined with improved safety communication, fire suppression sprinklers, and alarm systems in the renovated lodging complex, the proximity of NPS staff would improve emergency service response. This would result in along-term, beneficial, minor cumulative effect on park operations.

Conclusion

Compared to Alternative A, Alternative B would have long-term, minor, beneficial and adverse effects on park operations resulting from improved response to emergencies, reduced costs for maintenance, more effective wastewater treatment, and lower life-cycle costs. A minor, long-term, adverse effect on park operations would occur because of the increased need for snow plowing. Cumulative impacts would relate to future uses, such as a cultural center near the entrance, a future transit plan, and staff housing located in close proximity to the Far View lodging complex, and would be beneficial to park operations.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

The impacts of Alternative C would be similar to those of Alternative B, with a few exceptions. Centralized courtyards, star viewing, and interpretive areas provide more opportunity for interpretive programs. This increased demand for NPS and concessioner services would not likely be noticeable by the visiting public and would have a long-term minor adverse effect on park operations, although interpretive staff increases would offset this impact if necessary. Additionally, there would be an incremental increase in maintenance of landscaping and weed control of newly vegetated and revegetated areas that would represent a minor long-term adverse effect.

The road, parking lot, and pedestrian pathway configuration would be made wheelchair accessible, improving visitor orientation, access and safety. Compared to Alternative A and Alternative B, this would have a short-term, beneficial moderate effect on park operations because it would reduce the need to repair and maintain deteriorating paved surfaces.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those of Alternative B.

Conclusion

The impacts of Alternative C would be similar to those of Alternative B, with a few added effects. In addition to Alternative B, adverse effects on park ranger and interpretation staff from increased visitor demands for interpretive programs and concessioner lodging services, and additional landscaping maintenance and weed control, would be minor. Moderate beneficial effects would result from reduced maintenance and lower life-cycle costs in a newly constructed complex.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Most impacts of Alternative D on park operations would be similar to those of Alternative C. Unique impacts associated with Alternative D would include the following.

Consolidating the lodge functions with lodging units would allow more efficient use of NPS staff time and enhance park operations, resulting in a long-term, minor beneficial effect.

Under Alternative D the buildings would be located closer to the road providing better emergency access to NPS mission-critical staff and emergency vehicles. Therefore, Alternative D would provide long-term, minor beneficial emergency response capability.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those of Alternative C.

Conclusion

The impacts of Alternative D would be similar to those of Alternative C, with added minor long-term benefits associated with the consolidation of the units and lodge and improved emergency vehicle access.

PUBLIC HEALTH AND SAFETY

AFFECTED ENVIRONMENT

Incident Response

Mesa Verde National Park has an annual visitation of about 600,000 visitors. Recent years have seen a drop in total numbers of visitors because the park was closed because of wildfires during the peak visitor season. Approximately 80 percent of visitation occurs during May through September. Winter visitation averages about 500 people per day. The park gate is open 24 hours a day. Therefore, incident response needs to be available around the clock and throughout the year.

Features in the park that require protection include visitors, cultural and natural resources, government-owned property, and concessioner facilities. Some of the challenges in protecting these resources and assets include the long distance to the nearest full-service community (more than 30 miles from the Administrative District on Chapin Mesa); the steep, winding park road that occasionally is blocked by snow or rockfall; and the highly flammable vegetation throughout the park.

The National Park Service has exclusive law enforcement jurisdiction within the park boundaries, and provides both first-response and backup for law enforcement. In addition, park staff are responsible for structural fire and initial wildland fire suppression; resource preservation, protection, and management; the operation and maintenance of all buildings and utilities; and road maintenance, including accident response, clearing of rocks and snow, and repairs.

The National Park Service has a written agreement with the Montezuma County sheriff's department to provide after-hours dispatch services. Through the county's 911 dispatch system, 24-hour response is available to the park. When requested, local and regional law enforcement will respond to medical or fire emergencies within the park boundaries.

Road failures on the first eight miles of road leading into the park have occurred several times within the past ten years because of unstable geology, and incidents at the tunnel, which is 4.5 miles from the entrance, also can block the road (NPS 2002e). These conditions can effectively isolate approximately 95 percent of the park facilities from outside emergency resources.

To address this situation, the park provides onsite emergency response by qualified employees. Target incident response times are as follows.

- Law enforcement response times, derived from Federal Bureau of Investigation standards, are:
    - Five minutes for potentially life-threatening situations;
    - Less than 8 minutes for medical situations or serious motor vehicle situations; and
    - Less than 20 minutes for protection of property.

- Fire response times are derived from *Director's Order #58: Structural Fire Management* (NPS 2001b). The target response time from receiving the call to initial attack and suppression is 5 to 10 minutes.

- For medical emergencies, the response time is 8 to 10 minutes from the call until an ambulance with advanced life support capabilities initiates travel.

- Response time for emergency maintenance is 8 to 10 minutes from the call-out until the equipment is on route.

The park has an excellent record for meeting targets, with a typical response time of 5 to 10 minutes.

A key strategy for successfully providing timely incident response is to house trained emergency-response employees within the park at strategic locations close to important features. The housing management plan (NPS 2002e) identifies 29 mission-critical positions (Category I) that must be staffed by individuals residing in the park to be able to respond to emergencies on a 24-hour basis.

Structural and Wildland Fire

Since Mesa Verde was established as a national park in 1906, 80 percent of the park has been burned. From the 1920s to 1970, an average of eight lightning ignitions occurred annually. Since 1970, this annual average increased to greater than 20 lightning ignitions. This increase probably is attributable to better observation methods than an actual increase in the number of fires.

Major fires within the past seven years are shown in Table 9 (note that the acreages in Table 9 include lands burned outside the park). During this period, prescribed burns and the Chapin 5 fire have reduced fuel loads around Far View.

TABLE 9. MAJOR FIRES IN MESA VERDE NATIONAL PARK, 1996 THROUGH 2003

Fire Name	Year	Acres	Cause
Chapin 5	1996	4,781	Lightning
Bircher	2000	19,709	Lightning
Pony	2000	1,352	Lightning
Long Mesa 2	2002	2,601	Lightning
Balcony Complex	2003	2,728	Lightning

Source: Mesa Verde National Park Internet site at http://www.nps.gov/meve/fire/firehistory.htm.

In response to these events, the park is preparing a new fire management plan. The plan will support efforts to keep the forest healthy while protecting the cultural resources of the park. The plan will consider multiple management techniques at the wildland/urban interface, including mechanical fuels reduction, prescribed fire for fuels reduction, fire suppression, and resource impact mitigation.

The existing lodging units are constructed on piers with the undersides of the buildings exposed. This increases the risk from fire that might advance across the ground and ignite a building from beneath.

Roadways

The Mesa Verde National Park entrance is on U.S. Highway 160, approximately midway between Cortez and Mancos (about 10 miles from each). The main park road extends about 15 miles from the entrance to the Far View lodging complex. Many drivers find the two-lane main park road challenging because of its many curves and long stretches with cliffs on the uphill side and steep drops on the downhill side. However, the road is well maintained with adequate shoulders and numerous pull-outs where visitors can admire the scenery and where slower vehicles can allow traffic to pass.

Visitor traffic is heavier in the summer than during the winter months. However, traffic on U.S. Highway 160 near the park is characterized as light throughout the year, and the highway generally operates below its design capacity. During the summer, traffic on the park road can be heavy at times, and traffic can move slowly behind the recreational vehicles that sometimes labor up the long slopes.

Far View Lodging Complex

Present conditions are not conducive to the most efficient incident response at the lodging complex. Communications are limited (e.g., no telephones in the individual units), alarm and fire suppression systems are inadequate and access to the lodging units can be restricted (e.g., narrow roadways, difficult wayfinding).

METHODOLOGY

Impacts on public health and safety were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for public health and safety are as follows.

Negligible: Public health and safety would not be affected, or the effects would not be measurable. Incident response times, accessibility and accident rates would be within historical norms.

Minor: Effects would be detectable and would include variations from historical norms for such factors as incident response times, accessibility or minor accident rates. However, they would not produce an appreciable change in public health or safety. If mitigation were needed, it would be relatively simple and would likely be successful.

Moderate: Changes to public health and safety would be locally apparent, and could be expressed as changes in response times, accessibility or accident injury from historical norms. Mitigation would probably be necessary to offset adverse effects and would likely be successful.

Major: Changes to public health and safety would be regionally apparent, and would result in changes in response times, accessibility or regional rates of accidental injury from

historical norms. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

Public health and safety are not considered to be resources that are protected by the Organic Act. Therefore, public health and safety do not warrant consideration of impairment.

The geographic areas that were evaluated for impacts on public health and safety include the entire park. Cumulative effects that would occur both within and outside of the Far View lodging complex and the entire park were determined based on the "Cumulative Effects Analysis Method" section.

Public health and safety issues that were identified during scoping and addressed in the impact analysis included:

- Providing timely response to emergencies and law enforcement situations.
- Adequacy of safety communications, alarm systems and fire suppression systems.
- Wildland fire.
- Americans with Disabilities Act access, including the need for visitors and park employees to safely use pedestrian pathways, sidewalks, and lodging facilities.
- Risks to visitors and employees from the transport of construction materials and the transport and use of heavy construction equipment.

IMPACTS OF ALTERNATIVE A - NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Emergency Response

The excellent incident response times currently occurring in Mesa Verde National Park is facilitated by staff that resides in housing located near the Far View lodging complex. However, limited turning radii for emergency response vehicles and congested traffic patterns in the lodging complex, coupled with less than optimum safety communication systems represent a long-term, minor to moderate adverse impact on health and safety.

Adequacy of Safety Communications and EMERGENCY Systems

Alternative A would not involve an upgrade in the safety communication, fire suppression or alarm systems. These conditions create potential safety risks to visitors and employees from the limited number of units with adequate safety communications, alarm systems and fire suppression systems. The impact on public health and safety would be long-term, adverse, and moderate in intensity.

Structural and Wildland Fire

Past vegetation thinning and prescribed burning for fuels management is evident at the Far View lodging complex. Although this action occurred as recently as 2001, some regrowth already has occurred. Fire hydrants have been recently installed throughout the lodging complex.

With Alternative A, health and safety associated with structural and wildland fire would not change from current conditions. The primary impact related to fire at the Far View lodging complex would be the inadequacy of the fire alarm and suppression systems. Risk from ignition underneath the open, exposed foundations would not be abated. As described above, this adverse impact of Alternative A would be long-term and moderate.

Americans with Disabilities Act Access

In its current condition and with continual maintenance, the Far View lodging complex would have a negligible to minor adverse effect on Americans with Disabilities Act access of visitors and park staff with impaired mobility. However, several of the lodging units are in poor condition and will continue to deteriorate to the point that they would need to be removed from service. Several steep sidewalks, curbs and stairways constrain those with impaired mobility. This may reduce the park's Americans with Disabilities Act compliance should any currently compliant lodging units or wheelchair accessible pathways be removed from service. Visitors or staff with impaired mobility would have increased difficulty moving within the Far View lodging complex which potentially would result in an increase in the risk of accidents. The overall effect would be long-term, adverse, and minor in intensity.

Emergency vehicle access to the lodge and some of the lodging units is constrained by the tight turning radii of the one-way road system. This also represents a long-term, minor adverse impact on health and safety.

Cumulative Effects

The park has an ongoing program to improve response to emergencies and law enforcement situations. This includes reviewing incidents after they occur for problems, identifying improvements to address those problems, and incorporating the solutions into standard operating practices for application in the future. For example, problems in disseminating information related to evacuations of the Far View lodging complex were noted during the year 2000 wildland fires. Changes in procedures enabled the park to provide better information to lodgers at Far View during the Long Mesa Fire in 2002. This ongoing program of review and improvement, in conjunction with Alternative A activities, would continue to produce a long-term, minor benefit to the health and safety of Far View lodgers, other park staff, and park visitors.

The National Park Service currently is preparing a new park-wide fire management plan. The plan will support efforts to keep the forest healthy while protecting the park’s cultural and natural resources and infrastructure. Although the park has an excellent record of safety during wildland fires, these events pose substantial risks to health and safety. Alternative A’s ongoing activities to improve the prevention and management of wildland fires near park infrastructure and cultural resources in Mesa Verde National Park would be an important component of the

fire management plan. Together, they would have a long-term, minor beneficial effect by helping to decrease the frequency and intensity of uncontrolled wildland fires in and near the Far View lodging complex and decrease risks to public health and safety.

Mesa Verde National Park also will be preparing a transportation management plan. Because traffic accidents are the primary cause of serious injuries and deaths in the park, consideration of public health and safety will be an important component of the transportation plan. A key consideration of the transportation plan will be improved safety for park visitors, lodgers, and other employees. Therefore, the transportation plan, in conjunction with Alternative A, would have a long-term, minor to moderate cumulative beneficial effect on public health and safety.

Conclusion

The effects of Alternative A would depend on the number and location of lodging units that remain in service. If all units remained in good repair, there would be negligible to minor adverse effects on public health and safety with regard to incident response, access and accident safety.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Emergency Response

Alternative B would upgrade the safety communications, and add fire sprinkler and alarm systems to the lodging units. Emergency vehicle access remains the same as there are no plans to change the turning radii of the one-way road system, however, route finding through the complex would be improved, providing for quicker emergency response. As a result, Alternative B would have a minor to moderate beneficial effect on emergency response because the renovated lodging units would be equipped with safety communication and fire alarm systems.

Adequacy of Safety Communications and Emergency Systems

The upgraded safety communication, fire sprinkler and alarm systems would increase safety for visitors and employees and have a long-term, moderate beneficial impact on the adequacy of the safety communication and emergency systems.

Structural and Wildland Fire

The rehabilitation of the lodge and lodging units at Far View would involve clearing of vegetation at the construction sites in association with grading the sites for foundations and drainage. The National Park Service also would implement more regular vegetation management for wildland fire control in the vicinity of the lodging complex. The units would be equipped with fire alarm and fire suppression systems as well as telephone communications.

Plantings for privacy would be established around the lodging units. However, protective zones free of trees and shrubs would be maintained in the immediate vicinities of the buildings, and

the privacy screens would only use native species that have relatively low flammability. Protection from wildland fire would be the highest priority, and screening would be provided only to the extent that it would not interfere with the defensibility of the buildings against fire. Additionally, the exposed undersides of the elevated units would be enclosed, reducing the risk of fire igniting the buildings from beneath.

Compared to Alternative A, the effect on public health and safety related to structural and wildland fire would be long-term, minor to moderate, and beneficial as a result of the vegetation management and the system upgrades.

Americans with Disabilities Act Access

The rehabilitated lodge and lodging buildings and newly paved pedestrian pathways would improve accessibility for all employees and visitors with impaired mobility and other disabilities. As a result, Alternative B would have a long-term, beneficial, moderate effect on the health and safety of park visitors and employees with disabilities.

Transport and Use of Construction Materials and Equipment

Heavy earth-moving equipment would be required to grade the Far View lodging complex construction sites for foundations and site drainage at Far View. Materials such as concrete and lumber would be transported to the complex. All of this construction-related traffic would access Far View using the main park road and access road to the complex. Effects of this would include the following.

- On the main park road, the adverse effects would be short-term and negligible. While some traffic-related inconveniences would occur, an increase in accidents would not be expected.

- At Far View, the adverse effects would be short-term and negligible to minor. The construction traffic would access the lodging construction site via the high-visitor-use area at the entrance to the lodging complex. An increase in minor accident rates could occur in the Far View area, but strict enforcement of speed limits, temporary detours, cautionary signage, fenced staging areas, and other safe driving practices among construction workers would prevent a measurable increase in accidents.

To minimize the potential for traffic or other accidents, Alternative B would include mitigation measures, such as the following.

- The contractor would be required to conduct daily tailgate worker safety sessions. These meetings would emphasize travel safety to and within the site, call attention to the presence of children in the Far View lodging complex, and remind workers that other drivers may be focused more on the scenery than on the traffic.

- Speed limits would be strictly enforced for construction workers and drivers of construction trucks. It may also be appropriate to lower speed limits around Far View while construction is in progress.

As a result of these actions, construction traffic would have a short-term, negligible to minor adverse effect on public health and safety.

Cumulative Effects

Most cumulative effects of Alternative B would be similar to those described for Alternative A. However, compared to Alternative A, the increased vegetation management that would occur as a result of this alternative could result in an incremental improvement in health and safety associated with fire management plan implementation. This would represent an additional long-term, minor beneficial cumulative effect.

Conclusion

The long-term effects of Alternative B on public health and safety would be beneficial compared to Alternative A and would include the following:

- Alternative B would have a long-term, minor beneficial effect on the ability of the park to provide emergency response.
- There is potential for long-term, minor to moderate beneficial effect for safety protection to visitors and employees as a result of upgrading the safety communication and alarm systems.
- More regular vegetation management associated with the renovated structures would have a long-term, minor to moderate beneficial effect by reducing the threats from wildland fires.
- A rehabilitated lodge, lodging units, and newly paved pedestrian pathways would provide a long-term, beneficial, minor effect on the safety of park visitors and employees with limited mobility or other disabilities.
- Construction-related traffic would have short-term, negligible to minor adverse effects on public health and safety that would end when construction was completed.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

The public health and safety effects of Alternative C would be similar to those described for Alternative B. This alternative would provide less consolidated lodging buildings, more public spaces, and more accessible pedestrian pathways compared to Alternative B.

Emergency Response

Alternative C would have effects on emergency response similar to Alternative B with some additional benefits. Adequate emergency vehicle turnaround would be provided at the lodge which would result in additional long-term, minor to moderate benefits to emergency response at the lodge. However, there would be a negligible adverse impact to emergency response because of the increase in the number of buildings associated with this alternative.

Adequacy of Safety Communications and Emergency Systems

Alternative C would have effects on the adequacy of safety communications and emergency systems similar to Alternative B.

Structural and Wildland Fire

Consolidation of the lodge functions within several buildings and lodging units configured around courtyards and outdoor interpretive areas provides more opportunity to maintain defensible space and for managing vegetation. Risks from wildland fire to public health and safety would be reduced compared to Alternative A. The building configurations (i.e., discrete units) would reduce the potential spread of structural fire. Additionally, the exposed undersides of the elevated units would be enclosed, reducing the risk of fire igniting the buildings from beneath. Therefore, there would be long-term, moderate, beneficial effects to structural and wildland fire management.

Americans with Disabilities Act Access

Alternative C would have effects on Americans with Disabilities Act access similar to Alternative B.

Transport and Use of Construction Materials and Equipment

Alternative C would have effects on the transport and use of construction equipment similar to Alternative B.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B.

Conclusion

Compared to Alternative A, Alternative C would have a negligible to minor, long-term, adverse effect on the ability of the park to provide emergency response because there would be several more buildings making it more difficult to quickly access buildings that are further from the main access road. Increased risk of short-term congestion in the vicinity of the road-side parking system increases these adverse effects.

This is countered by the long-term, minor to moderate and beneficial effects provided by the emergency access to the lodge, and buildings configured around public spaces thereby minimizing the spread of structural and wildland fire. Other effects on public health and safety would be similar to those described for Alternative B.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

The effects of Alternative D would be similar to Alternatives B and C with regard to emergency response, adequacy of safety communications and emergency systems, and the transport and use of construction materials and equipment.

Emergency Response

Alternative D would have effects on emergency response similar to Alternative B with some additional benefits. Adequate emergency vehicle turnaround would be provided at the new consolidated lodge and lodging units which would result in additional long-term, minor to moderate benefits to emergency response.

Adequacy of Safety Communications and Emergency Systems

Alternative D would have effects on the adequacy of safety communications and emergency systems similar to Alternative B.

Structural and Wildland Fire

The consolidation of the lodge functions within one to three buildings configured around courtyards and outdoor interpretive areas provides more opportunity to maintain defensible space and for managing vegetation. Wildland fire threats to public health and safety would be improved compared to Alternative A. The undersides of the elevated units would no longer be exposed to fire ignition risk from beneath because the foundations would be enclosed. However, there is an increased potential for the spread of structural fire in the consolidated buildings. Therefore, Alternative D would have long-term, moderate, beneficial effects on public health and safety with regard to wildland fire and long-term, minor, beneficial effects to public health and safety in relation to structural fire.

Americans with Disabilities Act Access

Alternative D would have effects on Americans with Disabilities Act access similar to Alternatives B and C with added benefits. The large courtyard entrance to the newly consolidated lodge and lodging units would improve accessibility for employees and visitors with impaired mobility. This would represent an added long-term, minor benefit to health and safety.

Transport and Use of Construction Materials and Equipment

Alternative D would have effects on the transport and use of construction equipment similar to Alternatives B and C.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternatives B and C.

Conclusion

Compared to Alternative A, Alternative D would have a long-term, minor, beneficial effect on the ability of the park to provide emergency response. Consolidating the lodge and the lodging units would improve emergency and Americans with Disabilities Act access. The improved accessibility and emergency response capability would reduce the overall risk of accidents and result in long-term, moderate, beneficial effects to public health and safety. Other effects on public health and safety would be similar to those described for Alternative B.

SUSTAINABILITY AND LONG-TERM MANAGEMENT

AFFECTED ENVIRONMENT

The Guiding Principles of Sustainable Design (NPS 1993) directs National Park Service management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. Sustainability principles have been developed and are followed for interpretation, natural resources, cultural resources, site design, building design, energy management, water supply, waste prevention, and facility maintenance and operations. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources. Please refer to the Energy Efficiency and Conservation Potential section for more details regarding these closely related topics.

The existing facilities at the Far View lodging complex were designed and constructed prior to the development of the National Park Service policies regarding sustainability and long-term management. As a result, the use of sustainable design and materials and energy efficient appliances is not up-to-date with regard to National Park Service policies.

METHODOLOGY

Impacts on sustainability and long-term management were evaluated using the process described in the "General Evaluation Method" section. Impact threshold definitions for sustainability and long-term management are as follows.

Negligible: Sustainability and long-term management would not be affected, or effects would not be measurable outside of normal variability. Any change in the ability to manage for sustainability in the long-term would be slight, and would occur in a relatively small area.

Minor: Effects on sustainability and long-term management would be small but detectable. Any change in the ability to manage for sustainability in the long-term would be small, and would occur in a relatively small area within the park. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.

Moderate: Effects on sustainability and long-term management would be readily apparent. Any change in the ability to manage for sustainability in the long-term would be considerable, and would occur in a relatively sizeable area throughout the park. Mitigation would probably be necessary to offset adverse effects and would likely be successful.

Major: Effects on sustainability and long-term management would be readily apparent, and would substantially change the degree of sustainable design or materials or the amount of energy used in a large area in and out of the park. Any change in the ability to manage for sustainability in the long-term would be far-reaching, and would occur over a relatively extensive area. Extensive mitigation would be needed to offset adverse effects, and its success would not be assured.

Note: Sustainability and long-term management is not considered a resource that is protected by the Organic Act. Therefore, sustainability and long-term management does not warrant consideration of impairment.

The geographic area that was evaluated for impacts on sustainability and long-term management includes a 150-foot buffer around the entire Far View lodging complex and the Far View wastewater treatment facility/ponds, including its access road. Cumulative effects that would occur both within and outside of this area were determined based on the "Cumulative Effects Analysis Method" section.

Sustainability and long-term management issues that were addressed in the impact analysis included:

- Concern that the existing lodging units and lodge do not currently employ sustainable design.
- Concern about the capability to recycle building materials and remove solid waste from the site during and after the project is complete.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Alternative A would not include any substantial efforts to use new sustainable design or materials in the Far View lodging complex. As a result, there would be a continued adverse impact on sustainability and long-term management in the complex because the original design and materials used in the complex do not contribute to sustainable concepts nor allow for the application of long-term management strategies that would support sustainability. This adverse impact would be considered moderate and long-term.

Cumulative Effects

There is not likely any interaction of Alternative A with other past, present, or foreseeable plans or projects that would contribute to a cumulative effect on sustainability.

Conclusion

Alternative A would continue to have a long-term, moderate adverse impact on sustainability and long-term management at the Far View lodging complex in Mesa Verde National Park.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Alternative B would have a long-term, minor beneficial effect on sustainability and long-term management in the Far View lodging complex. This effect would accrue as a result of the replacement of some non-sustainable materials currently in use at the complex with building materials more likely to support sustainability. There would be constraints in achieving the highest degree of sustainability because much of the existing complex would be retained. The out-dated designs and building materials that would be retained in the complex would represent the portion that would not be applicable to a sustainability upgrade.

The upgrades that would occur, including, but not limited to, the installation of insulation, upgrades to windows and roofs, and enclosing the lodging unit foundations, would add to the sustainability of the complex. Energy efficieny and the potential to conserve energy would be enhanced with renovations in the complex. However, the use of the Far View lodging complex in the winter months would present additional challenges to implementing sustainable long-term management options in buildings that were designed and built decades ago. Winter use would represent a negligible to minor, local, adverse impact on sustainability and long-term management because of the inability to provide for the greatest sustainable environment in the old buildings of the complex. Refer to the Energy Efficiency and Conservation Potential impact topic for an expanded discussion of energy efficiency and conservation.

Cumulative Effects

Other new development projects in Mesa Verde National Park, including the Far View housing project, the HVAC project on Chapin Mesa, and the development of the Cultural Center, would all contribute to an enhanced ability to implement sustainable design and long-term management in the park. Cumulatively, in conjunction with Alternative B, the effect on sustainability and long-term management within the park would be minor to moderate, as upgrades and new construction would allow NPS sustainable design concepts and policies to be implemented.

Alternative B would contribute to this overall beneficial cumulative effect in a small way as it would only be a renovation and the full implementation of sustainable concepts could not be achieved based on the old designs and facilities that would remain at the Far View lodging complex.

Conclusion

Alternative B would have a long-term, minor beneficial effect on sustainability and long-term management in the Far View lodging complex. This effect would accrue as a result of the opportunity to replace some non-sustainable materials. Winter use would represent a negligible to minor, local, adverse impact on sustainability and long-term management.

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

Alternative C would have moderate, long-term beneficial effects on sustainability and long-term management in the Far View lodging complex. The beneficial effect would occur as a result of the opportunity to design the complex using the full complement of sustainable building materials on the market, the latest design innovations, and use the most advanced technology in the construction of new lodging units.

The consideration of and employment of passive, and possibly active, solar design, photovoltaics, and environmentally-oriented siting are just a few of the "green" technologies that would contribute to the moderate sustainability benefits.

Cumulative Effects

Cumulative effects of Alternative C would be similar to those described for Alternative B, although the contribution of Alternative C to the beneficial cumulative effect on sustainability would be greater. The increased contribution of Alternative C would occur because the lodging units would be newly constructed, which would allow incorporation of as many new technological, sustainable innovations as the project budget would permit.

Conclusion

Alternative C would have moderate, long-term beneficial effects on sustainability and long-term management in the Far View lodging complex. Additionally, Alternative C would contribute to cumulative effects in a manner similar to Alternative B, but with an even greater proportional cumulative contribution to sustainability and long-term management.

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

Alternative D would have moderate, long-term beneficial effects on sustainability and long-term management in the Far View lodging complex, similar to the effects of Alternative C. Construction of a consolidated lodging building and demolition of the existing units would affect the entire area of the complex and allow for the application of new technologically innovative sustainable design elements and management options.

Cumulative Effects

Cumulative effects of Alternative D would be similar to those described for Alternative C.

Conclusion

Similar to Alternative C, Alternative D would have moderate, long-term beneficial effects on sustainability and long-term management in the Far View lodging complex.

VISITOR UNDERSTANDING AND APPRECIATION

Approximately 600,000 visitors come to Mesa Verde National Park each year, both from the United States and from foreign countries, with the heaviest visitation in the summer months. Visitors come to see the World Heritage archeological sites found in Mesa Verde, dating from A.D. 600 to A.D. 1300, and which are among the most notable and best preserved in the United States. Many of these visitors come long distances to enjoy the park and to learn about the lives of the Ancestral Pueblo peoples. Positive visitor experiences and understanding fosters a sense of resource stewardship and support for the mission of the park and the National Park Service.

Upon arriving at Mesa Verde, visitors have a myriad of diverse interpretive and educational opportunities, but many factors influence their understanding and appreciation of the park. Visitor mobility, or "way finding," the ability to get from place to place within Mesa Verde National Park, contributes greatly to the visitor's perception of their experience in the park. Conditions on the road from the entrance to the top of Chapin Mesa and Far View can be challenging, as the road is narrow, has steep grades, and sharp turns with limited sight lines. The 15-mile drive can take up to half an hour or more, depending on the traffic volume.

Some visitors choose to enjoy the park during the daytime and find lodging in local communities. For some of these day-use visitors, the distance and time involved to reach the park tends to limit their overall park experience. Visitors who chose to maximize their opportunities by staying overnight in the park are able to participate in additional activities such as attending campfire talks and tours, viewing wildlife, and gazing on the scenic viewsheds that are an important component of the visitor experience at Mesa Verde. Views of night skies are possible because the park's relatively remote location assures visitors views of dark night skies not seen in most urban or developed areas. The natural soundscapes also contribute to a positive visitor experience.

During the winter months, visitors' choices are restricted by the absence of lodging facilities within the park, but in spring, summer, and fall, overnight visitors can choose from two options: 1) the campground and village at Morefield Canyon that serve both recreational-vehicle and tent campers, or 2) the lodging facilities at Far View. In 2002, 6 percent of the park's visitors chose to stay at Far View, while in 2001 about 7.8 percent stayed at Far View (note: these percentages are based on a general average of 600,000 visitors annually).

Many visitors who come to Mesa Verde have no idea where to go or what to see, and Far View may be the first opportunity visitors have to begin to plan their trip. While the visitor center at Far View is centrally located, the current Far View lodging facilities are not well integrated with the park's interpretation program and do not convey a clear sense of the park's character, significance, or sense of place to the visitor. Interpretive opportunities that are not well integrated with the visitor experience can cause visitors to miss tours and interpretive programs vital to understanding the park, leading to a sense of frustration.

Traffic circulation patterns in the Far View area also are confusing, especially to first time visitors. Access from the parking areas to the lodge or individual units is not always convenient, leading to the creation of informal social trails, and elderly or disabled visitors may encounter difficulty in reaching their rooms. Space within the lodge is poorly organized, contributing to

crowding, noise, and poor service. The 30-year old lodging units at Far View are substandard; they fail to meet all safety requirements, building codes, current Americans with Disabilities Act standards, and visitor "comfort" needs. For example, there are no phones in individual rooms, making contact with others difficult. Poorly maintained sidewalks and use of social trails can lead to falls and injuries. Lack of facilities meeting Americans with Disabilities Act standards also can contribute to visitor frustration or injury, and diminished visitor experience. Visitor concerns have been expressed about visitor accommodation, comfort, accessibility and security, and surveys indicate visitors' desire for rehabilitation and upgrading of the facility.

The current facilities at Far View were designed to provide opportunities for incredible views of Mesa Verde's canyons and mesas and the development was created in an area surrounded by natural resources. However, the lodge area landscape and site layout do not always compliment the natural surroundings, and social trails form a landscape eyesore that detract from a positive visitor experience.

The buildings in the complex are a mixture of styles, and use designs, materials, workmanship, and have an appearance different than the Pueblo Revival Architectural style buildings that help to define the character of much of the built environment in Mesa Verde National Park. Many visitors intuitively associate Rustic or Pueblo Revival style buildings with a major National Park area, and expect to find this style in the park facilities.

IMPACTS OF ALTERNATIVE A – NO ACTION/CONTINUE CURRENT MANAGEMENT

Analysis

Visitor experience under Alternative A would not differ from current conditions as described in the Affected Environment section. Spatial organization of the vehicle and pedestrian circulation would continue to be confusing and unsafe, and the lodge would not be readily visible from the roadway. The terrain surrounding the lodge and the lodging units would continue to be challenging, especially for the elderly and disabled. The current design and organization of the lodge would continue to foster crowded and noisy conditions, with delays in visitor service. Safety issues (aging and deteriorating utility systems, failing sidewalks and social trails, lack of fire alarm and telephone communication systems, traffic congestion, and inadequate turning radii for emergency vehicles) also would contribute to a less than fully positive climate for visitor appreciation and enjoyment.

The lack of lodging during the winter months further contributes to a reduction in understanding and appreciation for some visitors. That is, visitors may never fully understand and appreciate the way prehistoric peoples coped with winter snows, survived the cold, or scaled cliffs in inclement weather.

Much of the visitor's experience in a national park is based on the sense of place that may be drawn from subtle visual and auditory clues such as the relationship between man-made structures and the natural environment. It is this visual character that continues to enthrall visitors, and provides them with an unobtrusive but pleasing counterpoint to the spectacular Mesa Verde setting and its fascinating human history. Many visitors' perceptions of a national

park include traditional styles in buildings and landscapes such as the park styles constructed during the 1920s and 1930s.

Unfortunately, the design of the various buildings and landscape(s) at Far View are incompatible with each other and with the park's history, theme, and architecture. Additionally, the structures fail to convey a unified sense of place or historic ambiance that is typically part of the overall visitor understanding and experience.

These factors would [continue to] have a long-term minor adverse effect on visitors' understanding and appreciation of the park's significance and natural and cultural values.

Cumulative Effects

In large parks such as Mesa Verde, many visitors return to the park on a regular basis. Over the long term, continuation of existing conditions would cumulatively result in long-term, minor adverse effects to visitor experience because of continued frustration over confusing access to lodging and information, and displeasure with facilities that do not meet 21st century visitor expectations, safety mandates, or Americans with Disabilities Act standards. Other on-going projects such as the cultural center would increase the ability of visitors to way-find and choose areas of the park to visit, but the limitations of the lodging facilities at Far View would remain. The lack of integration of interpretation into the Far View facilities also may diminish visitor understanding and appreciation. Potential increases in facilities at Morefield would provide a few additional lodging alternatives, but those overnight visitors who do not own recreational vehicles or are not tent campers would be limited in their choice of lodging. Alternative A would have a long-term, minor adverse cumulative impact on visitor understanding and appreciation.

Conclusion

Alternative A would have a long-term, minor adverse effect on visitor understanding and appreciation of the park's significance and natural and cultural values. Cumulative effects would be minor and adverse.

IMPACTS OF ALTERNATIVE B – REHABILITATE THE LODGE AND LODGING UNITS

Analysis

Implementation of Alternative B would provide the opportunity for year-round lodging, which potentially would give visitors more opportunities to experience the park's natural quiet, wildlife, and a sense of solitude during the off-season(s) (many of the popular destinations are often crowded during the peak visitation periods). The Far View lodging complex would continue to provide exceptional views of the surrounding landscape.

Within the complex, the traffic patterns would continue to be constrained by the one-way design, and combined visitor transit operation, parking, and emergency access would contribute to congestion, unsafe conditions during an emergency, and visitor frustration. The lodge would not be easily visible from the road, causing confusion for some visitors.

Rehabilitation of social trails and construction of new sidewalks would improve pedestrian circulation, and visitor orientation and convenience as well as reducing unsightly and unsafe conditions. On the other hand, the disparate building layout and organization of the area would continue to contribute to difficult way-finding and access. Because sidewalks would retain the same general location, new social trails could proliferate. The sloping terrain and the relatively long distance between the lodge and some of the lodging units would continue to make access difficult for some visitors, and access to service areas would not be improved.

Rehabilitation of the lodging by retrofitting the buildings and upgrading or adding telephones, utilities, and fire safety features would improve visitors' orientation, convenience, safety, comfort, and accessibility. On the other hand, buildings would still retain some old structural elements, which could contribute to increased maintenance needs and reduced visitor comfort. Incorporating individual buildings into a larger structure could increase the potential for noise from adjoining rooms.

Visitor services would be modestly enhanced by changes in the lodge that would provide more facilities and visitor service opportunities as well as better service. The entire site would become more accessible with regard to Americans with Disabilities Act standards. However, proposed changes to the lodge also would reduce the dining capacity a small amount (probably no more than 8 seats), possibly contributing to longer waiting periods for meal service. Renovation of the exterior facades of the buildings at Far View would help to reduce the architectural incompatibility of the various buildings, both within the complex and with historic buildings in other parts of the park.

During construction, noise, traffic delays, and limited access would have a minor adverse impact on visitor experience, but this would be short-term. Traffic congestion, constraints of the one-way traffic pattern, narrow roadways, and disparate building arrangements and unchanged pedestrian circulation patterns would continue to be confusing and frustrating for visitors. The retrofitted lodging buildings would still be visually different from and somewhat incompatible with others in the park.

The adverse impacts of traffic congestion, difficulty in visitor wayfaring, and building incompatibility on visitor understanding and appreciation would be long-term and minor. Improvements to the buildings and site would have a minor to moderate beneficial impact on visitor understanding and appreciation.

Cumulative Effects

Alternative B would cumulatively result in long-term, minor benefits to visitor understanding and appreciation because of opportunities for year-round lodging, additional opportunities to experience park resources, and improvements in visitor accommodations. Other ongoing park projects, including construction of the cultural center, also would help to produce a more positive visitor experience, reducing some of the frustration over wayfinding. Some of these advantages would be partially offset by continued frustration at Far View over ease of access to the lodge, traffic congestion, and disparate building arrangements, resulting in a negligible adverse cumulative effect.

Conclusion

Implementation of Alternative B would have long-term minor to moderate beneficial effects on visitor understanding and appreciation, while at the same time minor adverse impacts of traffic congestion, narrow roadways, and disparate building arrangements would occur. Cumulative effects would be both beneficial (minor) and adverse (negligible).

IMPACTS OF ALTERNATIVE C – EXPAND AND CONVERT THE LODGE AND CONSTRUCT NEW LODGING UNITS

Analysis

As described in Alternative B, provision of overnight accommodations and continuing attention to preserving the spectacular viewsheds from the Far View area would enhance visitor understanding and appreciation for the park. Traffic congestion would be continue because of narrow road widths, parking on both sides of the road, and numerous entryways. On the other hand, modifications to the parking lots and vehicle transit would improve visitor safety, increase accessibility and better direct visitors to lodging facilities. Separation of some of the functions of visitor reception and use from the busy and overcrowded lodge would help reduce noise and congestion while improving visitors' initial orientation to the site and access to facilities.

By adapting the site plan to the natural slope of the land, accessibility would be improved. Redesign of the pedestrian walkways also would enhance safety and accessibility. New orientation for walkways would reduce the potential for social trails, and visitors would be able to move more easily within the complex. However, some visitors might be confused by the numerous buildings and walkways.

Construction of new facilities would greatly improve visitor comfort and access to service areas in the Far View lodging complex. By placing some of the existing lodge functions (gift shop, meeting rooms) in a separate building near the entrance to Far View, visitors could quickly find out where to go to register for lodging or to get information. By rehabilitating and expanding the lodge, dining facilities would be increased and visitor amenities enhanced; dining could become a more leisurely and enjoyable experience. Individual lodging units separated by landscape features would tend to be more private and quiet than conjoined units. The new site layout would create additional opportunities for visitor relaxation and enjoyment. The addition of star viewing areas would enhance integration of the park's interpretive programs into the visitor experience at the Far View area.

The overall appearance of the site would be much improved over that of the existing facility. Use of a unified design and materials would help to visually connect all the buildings in the Far View lodging complex and make the site compatible with the park's existing historic architectural themes.

Implementation of Alternative C would result in a long-term moderate benefit on visitor understanding and appreciation of the park. Minor adverse impacts of traffic congestion, narrow roadways, and disparate building arrangements would continue.

Cumulative Effects

When considered along with the numerous other park projects, including proposed construction of the cultural center, Alternative C would cumulatively result in long-term, moderate benefits to visitor understanding and appreciation because of the potential for year-round lodging, additional opportunities to experience park resources, and improvements in visitor accommodations. These benefits would be diminished only slightly by the continued visitor frustration over traffic conditions.

Conclusion

Implementation of Alternative C would have long-term moderate beneficial effects on visitor understanding and appreciation, while at the same time minor adverse impacts of traffic congestion, narrow roadways, and disparate building arrangements would occur. Cumulative effects would be both beneficial (moderate) and adverse (negligible).

IMPACTS OF ALTERNATIVE D – CONSTRUCT A NEW LODGE CONSOLIDATED WITH NEW LODGING UNITS

Analysis

As described in the other action alternatives, provision of overnight accommodations at Far View would enhance visitor understanding and appreciation for the park. There might be a slight reduction in visitors' ability to view the spectacular scenery of the area from inner rooms at the hotel, but consolidation of disparate units into a single destination/facility/location would have certain advantages.

New roadways, parking, and turnarounds would provide for safer, less confusing access to visitor facilities and would improve access for emergency vehicles and visitor transit. The consolidated facility/single destination would allow high ease of access and way-finding, and would help alleviate visitor confusion over where to go for lodging and food services. Registration, lodging, and dining would be much more efficient and accessible, with more amenities. Facilities would be more convenient because visitors would not have to walk a long distance over uneven terrain to reach their destination.

New facilities would provide enhanced visitor comfort and safety, although the noise level in larger hotel facilities could be slightly higher than in individual lodging units. Expanded and modernized dining facilities would provide for a more serene and efficient dining experience. Inclusion of interpretive areas in the facility design would provide excellent opportunities for visitors to expand their park experience and understanding while at Far View. Centralization of functions would allow maintenance of a more natural landscape, and would eliminate the primary reasons for social trailing.

Structural designs that are compatible with the rest of the park's architecture would visually link Far View to the area's history and give visitors a stronger sense of being in a national park.

Overall, implementation of Alternative D would be moderately beneficial in the long-term for visitor understanding and appreciation. The moderate benefits of Alternative D would be incrementally greater than the moderate benefits anticipated under Alternative C, but they would still be within the bounds of the moderate impact definition.

Cumulative Effects

When considered along with the numerous other park projects, including proposed construction of the cultural center, Alternative D would cumulatively result in long-term, moderate benefits to visitor experience because of the potential for year-round lodging, additional opportunities to experience park resources, and improvements in visitor accommodations.

Conclusion

Implementation of Alternative D would have long-term moderate beneficial effects on visitor understanding and appreciation. Cumulative effects would be moderately beneficial.

CONSULTATION AND COORDINATION

SCOPING

Public and NPS Scoping

The goal of scoping was to solicit public and staff input regarding the environmental issues and project alternatives to be addressed in this environmental assessment. Internal and external scoping included the following.

Public Scoping

NPS staff made a presentation at a public meeting describing the rehabilitation or replacement of the Far View lodging complex on April 24, 2003. The National Park Service will provide any interested persons from this group and the public opportunity to review and comment on this environmental assessment.

Tribal Consultations

Twenty-four tribes, listed in Table 10, are culturally affiliated or associated with Mesa Verde National Park. Since September 1993, park staff members have been consulting with these tribes at least once a year under the Native American Graves Protection and Repatriation Act (NAGPRA). The meetings focus on NAGPRA issues, but the park also discusses other park management topics of possible interest to the tribes. These topics have included rehabilitation or replacement of the Far View lodging complex.

A typical consultation meeting lasts 3 days and is attended by most of the pueblos and tribes. On the first day, the park presents items for discussion. During each presentation, there are opportunities for questions. Often, field trips are used to clarify issues, or for religious reasons. On the morning of the final day, the tribal representatives hold a closed executive session. This session allows the Native American representatives to have a more open discussion while protecting culturally sensitive information. One representative is selected to present the results of the executive session to the attending park staff, who may ask for clarification. Then the meeting concludes.

For this project on rehabilitation or replacement of the Far View lodging complex, NPS staff made a presentation at the Native American consultation meetings in March 2003 and on September 4 and 5, 2003. No comments have been received to date. The National Park Service will provide this group with copies of this environmental assessment for review and comment.

Consultations with the Colorado State Historic Preservation Officer

In late 2002, informal consultations were held with the office of the Colorado state historic preservation officer regarding the potential for listing any parts of the Far View lodging complex in the National Register of Historic Places. The results of those discussions are included in the "Cultural Landscapes" section.

NPS personnel indicated that the draft environmental assessment and assessment of effect would be sent to the state historic preservation officer with a request for review and comment.

TABLE 10: TRIBES AND PUEBLOS THAT ARE CULTURALLY AFFILIATED OR ASSOCIATED WITH MESA VERDE NATIONAL PARK

Tribe/Pueblo	City	State
Acoma, Pueblo of	Acomita	New Mexico
Cochiti, Pueblo of	Cochiti	New Mexico
Isleta, Pueblo of	Isleta	New Mexico
Jemez, Pueblo of	Jemez	New Mexico
Laguna, Pueblo of	Laguna	New Mexico
Nambe, Pueblo of	Santa Fe	New Mexico
Picuris Pueblo	Penasco	New Mexico
Pojoaque, Pueblo of	Santa Fe	New Mexico
Sandia, Pueblo of	Bernalillo	New Mexico
San Felipe, Pueblo of	San Felipe	New Mexico
San Ildefonso, Pueblo of	Santa Fe	New Mexico
San Juan, Pueblo of	San Juan	New Mexico
Santa Ana Pueblo	Bernalillo	New Mexico
Santa Clara Pueblo	Espanola	New Mexico
Santo Domingo, Pueblo of	Santo Domingo	New Mexico
Taos Pueblo	Taos	New Mexico
Tesuque Pueblo	Santa Fe	New Mexico
Ysleta del Sur Pueblo	El Paso	Texas
Zia, Pueblo of	Zia Pueblo	New Mexico
Zuni, Pueblo of	Zuni	New Mexico
Hopi Tribe	Kykotsmovi	Arizona
Navajo Nation	Window Rock	Arizona
Ute Mountain Ute Tribe	Towaoc	Colorado
Southern Ute Tribe	Ignacio	Colorado

Other Agencies and Organizations Contacted

The following organizations and agencies were contacted for information; assisted in identifying important issues, developing alternatives, or analyzing impacts; or will be asked to review and comment on the environmental assessment.

ARAMARK Mesa Verde
U.S. Fish and Wildlife Service
Colorado State Historic Preservation Officer
PricewaterhouseCoopers

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AVAILABILITY ON THE INTERNET

This document is available on the internet via the park's "News, Current Events, Plans" page at http://www.nps.gov/meve/public_info_office/public_info_office_home.htm. Navigate under "2004" to the Far View Lodging Rehabilitation/Replacement of Facilities Environmental Assessment. The document can be viewed online or downloaded.

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REFERENCES

Architectural Research Consultants, Inc. (ARC)

2002 Condition Assessment for Far View Lodge, Morefield Campground and Other Concessioner Building in Mesa Verde National Park. Albuquerque, NM. March.

Colorado Biz

2001 "After the Burn Mesa Verde Plans Rise from the Ashes." Available on Internet at http://www.cobizmag.com/Issues/Jan2001/pages/feature3.cfm

Colorado Department of Revenue

2003 Colorado Sales/Use Tax Rates, (DRP 1002, January 2002). Available on Internet at http://www.revenue.state.co.us/PDF/drp1002.pdf, accessed on June 10, 2003.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe

1979 *Classification of Wetlands and Deepwater Habitats of the United States.* Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services. FWS/OBS-79/31.

Ives, Gay

2003 Personal Communication from Gay Ives, Archeologist, Mesa Verde National Park, to Diane Rhodes, Parsons, 5 June 2003.

Montezuma County

1996 *Montezuma County Comprehensive Plan* . Montezuma County Planning Commission.

National Park Service, U.S. Department of the Interior (NPS)

no date National Register Bulletin #30, Guidelines for Evaluating and Documenting Rural Historic Landscapes. National Park Service, Washington, D.C.

1970 Mesa Verde National Park - An Administrative History 1906-1970, by Ricardo Torres-Reyes. Office of History and Historic Architecture Eastern Service Center, Washington, D.C.

1979 Mesa Verde National Park General Management Plan. May.

1993 *National Park Service Guiding Principles of Sustainable Design*. D902. Denver: Government Printing Office.

1997 *Mesa Verde: Mesa Verde National Park, Colorado*. Washington, D.C.: Government Printing Office. Park brochure 432-903/60339.

1998a *Director's Order #2: Park Planning*. [Washington, D.C.].

1998b Director's Order #28: Cultural Resources Management. [Washington, D.C.].

1998c *Housing Needs Assessment and Local Market Analysis: Mesa Verde National Park.* Albuquerque, NM: Architectural Research Consultants, Inc. • Sites Southwest.

1998d *Cultural Resources Management Guideline.* [Washington, D.C.]

1999 *Planners' Sourcebook: Director's Order 2: Park Planning, Framework for NPS Park Planning and Decision Making, Reference Manual 2.* [Washington, D.C.].

2000a *Director's Order #47: Soundscape Preservation and Noise Management.* Washington, D.C. Available on the Internet at http://www.nps.gov/refdesk/DOrders/DOrder47.html

2000b *Management Policies 2001.* National Park Service D1416. Washington, D.C.

2001a *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making.* [Washington, D.C.].

2001b *Director's Order #58: Structural Fire Management.* [Washington, D.C.].

2001c [Draft] Cultural Landscapes Inventory, Mesa Verde National Park, Colorado. Prepared for NPS Intermountain Region by Shapins Associates, Boulder, Colorado.

2002a Memorandum to Mesa Verde Chief of Maintenance from George San Miguel, Natural Resource Management Specialist dated 27 September 2002.

2002b *Environmental Assessment and Assessment of Effect: Cultural Center, Mesa Verde National Park.* Prepared for the National Park Service by Parsons, Denver, Colorado. Available on the Internet at http://www.nps.gov/meve/mvnp/pio/meveccea2.pdf.

2002c Colorado Plateau Regional Review. Chapter 11: Mesa Verde National Park. Available on the Internet at http://www.aqd.nps.gov/ard/pubs/coloplat.review.

2002d *How to Apply the National Register Criteria for Evaluation.* National Register Bulletin #15. Available on the Internet at http://www.cr.nps.gov/nr/publications/bulletins/nr15_toc.htm.

2002e *Housing Management Plan: Mesa Verde National Park.* Intermountain Region. On file at Mesa Verde National Park.

Novotny, V. and H. Olem

1994 Water Quality: Prevention, Identification and Management of Diffuse Pollution. Van Nostrand Reinhold, New York.

Parsons

2003 *Internal Draft Environmental Assessment: Mesa Verde National Park Installation of New Heating, Ventilation, and Air Conditioning System.* Denver, CO. On file at Mesa Verde National Park.

San Miguel, George

2003 Personal communication from George San Miguel, Natural Resources Manager, Mesa Verde National Park, to Mark Norman, Parsons, 18 June 2003.

Trap, Patricia

2004 Personal communication from Patricia Trap, Park Planner, Mesa Verde National Park, to Diane Rhodes, Parsons, February 26, 2004.

Tripadvisor

2003 Hotels and Vacation Packages. Available on Internet @ http//www.tripadvisor.com/Hotels-g60857-Cortez_Colorado-Hotels.html, accessed on June 2, 2003.

U.S. Environmental Protection Agency (EPA)

1996 *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses*. Available on the Internet at http://www.epa.gov/compliance/resources/policies/ej/ej_guidance_nepa_epa0498.pdf.

2003 Surf Your Watershed – Mancos Watershed Profile. Available on Internet@ http://cfpub.epa.gov/surf/huc.cfm?huc_code=14080107, accessed on June 17, 2003.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

March 2004

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